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The Travelling Diagnostic Chest Clinic

G. C. BRINK, M.B.

Department of Health, Ontario

THE Provincial Department of Health has, since 1924, maintained a Travelling Clinic for the diagnosis of diseases of the lungs.

The staff of the clinic consists of from one to three physicians and a nurse. The equipment includes a portable X-ray unit, and X-ray films are taken of every case. Tuberculin tests are done on all children (under sixteen years of age). Clinics are organized only with the consent of the County or Local Medical Society and, where no such organization exists, the practising physicians.

No case is admitted to the clinic unless referred by the family physician. No information is given to the patient at the time of examination. When the clinic returns to Toronto and the X-ray films are interpreted and all data correlated, a typewritten report is sent to the physician who has referred the case. This report includes history, physical findings, X-ray interpretations, a diagnosis if possible, and any recommendations that might be of assistance. In this way the clinic is working directly with the medical profession in the public service—a service which is supplied by the Provincial Department of Health without cost to the physician or patient.

Any chest case which a physician refers to this clinic is examined, including non-tuberculous, suspicious cases, and contacts. Emphasis is placed on the importance of examining contacts, particularly of children and all suspicious cases. It is the desire of the clinic staff that physicians referring cases will feel free at all times to attend the clinic during the examination of their patients.

The objects of the clinic are:—

- (1) To be of assistance to physicians in centres not in close proximity to sanatoria or chest consultants.
- (2) The education of the public in the importance of early diagnosis and treatment of pulmonary tuberculosis, the frequent observation of contacts and the value of periodic general examination by the family physician.

(3) The obtaining of statistical information that might be of value in connection with the study of tuberculosis.

To date, one hundred and forty-six clinics have been held in sixty centres, and more than ten thousand cases have been examined. Eighteen of these clinics were organized by the Division of Industrial Hygiene and were conducted in industrial plants.

Equipment for the Travelling Clinic

The following equipment has been found desirable and is given with a notation regarding the arrangement in boxes as this is of importance, not only from the standpoint of shipping but of the facility for arranging the clinic.

1. *Wappler Machine*

Box 1—Contains Control.

Box 2—Contains Transformer.

Box 3—Contains Tube arm, reels, wiring, fuses (instruments for use in case of a breakdown and other accessories).

2. *Keleket Machine*

Box 1—Contains Control.

Box 2—Contains Transformer.

Box 3—Contains Tube arm and accessories, including timer.

3. *New Keleket Portable*

Box 1—Contains entire machine, including control, portable dark-room, tube and accessories, apart from timer.

Box 2—Contains X-ray tube. It is very seldom sent by express.

Box 3—Contains take-down upright stand to hold Cassettes.

Box 4—Contains Cassettes and Films; this is lead lined.

Box 5—Packed by the nurse and containing gowns, towels, tuberculin, syringes, stethoscope, tape measure, fuses, record book, clinical charts, thermometers, absorbent cotton, gauze, alcohol, scissors, tongue depressors, lead numbers for films, red light for dark room, etc.

Box 6—Contains portable scales.

Box 7—Contains extra extension wire. Small electric heater, sterilizing dish, hammer, screw driver and pliers.

Box 8—Contains portable dark room which consists of a take-down aluminium frame and tent-like cover of two thicknesses. (The portable dark room is used only where it is impossible to darken a small room in close proximity to that in which the X-ray machine is assembled. It is very seldom used. A suitable room that can be darkened is usually found.)

Box 9—Contains small upright take-down stand on which is hung lead rubber apron for protection of the operator. (This is used only occasionally.)

NOTE—If Wappler Machine is carried, three boxes are required for complete X-ray machine.

If Old Keleket Machine is used, three boxes are required for complete X-ray machine.

If New Keleket Machine is used, only one box is required for complete X-ray machine.

Arrangements of Clinic

The clinic is conducted, if possible, in the hospital of the municipality. If there is no hospital, the library, Town Hall or occasionally rooms in a hotel are used. Sometimes a vacant apartment can be obtained.

If one doctor is working, three rooms are required, an examining and X-ray room combined, a room for the portable dark-room if a room cannot be satisfactorily darkened and a room or hall for the nurse where patients may wait.

All the appointments are made by the Medical Officer of Health or the Secretary of the Medical Association. Frequently the Matron of the hospital or switchboard operator is delegated by the Medical Officer of Health to do this work. Each patient is allotted a certain hour. Examination of twelve patients is considered a full day's work; usually a greater number are examined, especially if several are children.

The duties of the nurse consist in helping to arrange the clinic rooms, taking the preliminary history, changing the X-ray films, sterilizing the tuberculin equipment and checking the numbers on clinic cards and cassettes. She also records the temperature, pulse and weight of each patient. (One machine operates on 25 cycle, and one on 60 cycle current and a rotary converter is carried in event of the necessity of using direct current.) The duration of the clinic is from two to six days depending on the number of appointments made.

TABLE I

SUMMARY OF FINDINGS—TRAVELLING DIAGNOSTIC CLINIC
ONTARIO, 1924-1929 (not including Industrial Clinics)

Year	No. Cases Examined	Minimal T.B.	Moderately Advanced T.B.	Far Advanced T.B.	Observation	Per Cent T.B. found
1924	360	41	30	27	72	27.2
1925	377	31	19	5	42	14.6
1926	608	59	39	12	79	18.1
1927	1463	161	76	54	172	19.9
1928	1533	131	88	59	228	18.1
1929	1549	129	73	57	155	16.7
Total	5890	552	325	214	748	18.5

Data concerning the findings of non-tuberculous conditions are presented in Table II. Diseased or suspicious tonsils and diseased teeth were very frequently found. Pleural effusion, empyema, bronchiectasis, asthma, new growth and heart disease were also found. The diagnosis of some of these non-tuberculous conditions was of very great assistance to the physicians presenting the cases.

Enquiry was made of each case regarding exposure to the disease. The following table presents the results of the study of the information concerning a history of exposure among the cases studied during the years 1924 to 1930 inclusive (Table III).

TABLE II

NON-TUBERCULOUS CONDITIONS—TRAVELLING DIAGNOSTIC CLINIC
ONTARIO, 1924-1930

Year	Diseased or suspicious tonsils	Diseased Teeth	Pleural Effusion	Empyema	Chronic Infection*	Bronchiec- tasis	Lung Abscess	Asthma Bronchial	Heart Condi- tions
1924	54	27	5	2	21	5	2	8	0
1925	107	40	1	0	7	4	2	9	0
1926	168	101	3	5	12	0	4	9	5
1927	344	312	13	3	24	20	2	16	34
1928	373	339	16	6	25	20	1	20	18
1929	340	180	4	7	32	14	2	28	10
1930 (9 months)	83	50	6	2	0	16	1	14	5

From the table below it is observed that of the 1,157 cases of tuberculosis, 398 (29 per cent) gave a definite history of exposure to the disease.

TABLE III

CASES IN WHICH CONTACT WAS KNOWN
1924-1930

Year	Total Cases	History of Contact	Per Cent	No Known Contact	Per Cent
1924	93	42	45.2	51	54.8
1925	52	22	42.3	30	57.7
1926	98	36	36.7	62	63.3
1927	277	91	32.9	186	67.1
1928	260	95	36.5	165	63.5
1929	237	72	30.4	165	69.6
1930 (6 months)	140	40	28.6	100	71.4
Total	1157	398	34.4	759	65.6

Considering these cases in two groups according to age, namely, under 16 years and over 16 years, striking evidence is afforded of the

*Under Chronic Infection are those cases that show evidence of chronic bronchitis or other non-specific lung pathology. In addition, 5 cases of new growth were discovered.

fact that children under 16 years of age are more liable to develop tuberculosis when exposed to it than are persons in the older age groups. In the age group under 16 years, 64 per cent of the cases studied gave a history of contact with the disease whereas in the group over 16 years, 32 per cent of the cases gave a history of contact. These data are presented in Table IV.

TABLE IV
CASES IN WHICH CONTACT WAS KNOWN
1924-1930

Age	Total Cases	History of Contact	Per Cent	No Known Contact	Per Cent
Under 16	82	53	64.6	29	35.4
Over 16	1075	345	32.1	730	67.9
Total	1157	398	34.4	759	65.6

As previously stated, the work of the clinic was not confined to the examination of suspected cases, but every effort was made to reach contacts of cases, either known or suspected, particularly contacts in the younger age groups.

The findings of the tuberculin test made of children, together with the history of exposure in each case, are presented in Table V. The total number of children examined was 1,887, and of these 993 (53.1 per cent) gave a history of contact and the balance, 894 (47.3 per cent), gave no history of exposure. Of the entire group, 45.6 per cent gave a positive tuberculin reaction.

TABLE V
TUBERCULIN TESTING OF CHILDREN WITH AND WITHOUT HISTORY OF EXPOSURE
1924-1930

Age	Contact			No Known Contact		
	No. of Cases	Per Cent *I.C. Pos.	Per Cent I.C. Neg.	No. of Cases	Per Cent I.C. Pos.	Per Cent I.C. Neg.
0-4	153	56.2	43.7	88	29.5	70.4
5-9	386	57.2	42.8	326	26.3	73.9
10-16	454	61.4	38.5	480	34.1	65.8
0-9	539	56.9	43.0	414	26.8	73.1
0-16	993	59.0	40.9	894	30.7	69.2

*I.C.—Intracutaneous tuberculin test.

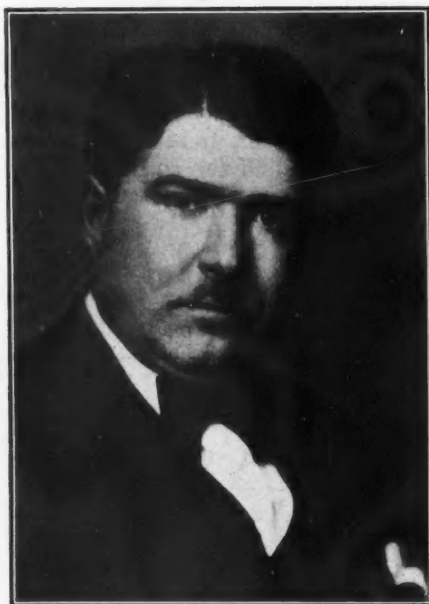
SUMMARY

1. Since the organization of the Travelling Diagnostic Clinic in Ontario, 1924, until 1929, inclusive, 5,890 cases have been examined, and a diagnosis of tuberculosis established in approximately 19 per cent.

2. Other conditions of importance (non-tuberculous) were found in 439 of these cases.

3. Of the cases of tuberculosis examined in children under 16 years of age, 64 per cent gave a history of contact in contrast with 32 per cent of those over 16 years of age, emphasizing the danger of contact in the younger age groups.

4. Of 1,887 children, 53.1 per cent gave a history of contact, of these 59 per cent gave a positive tuberculin reaction.



SENATOR THE HONOURABLE GUSTAVE LACASSE, M.D.
Medical Officer of Health, Sandwich East Township
PRESIDENT, ONTARIO HEALTH OFFICERS' ASSOCIATION

L'Unité Sanitaire de Comté Comme Solution du Problème de l'Hygiène Infantile Dans les Régions Rurales

DR. ALPHONSE LESSARD

Directeur, Service Provincial d'Hygiène de Québec

LE domaine de l'hygiène infantile dans les régions rurales, est un de ceux où l'Unité sanitaire de comté, telle qu'organisée dans la province de Québec, exerce ses activités les plus considérables.

L'expérience de ce qui s'est passé en Angleterre et aux Etats-Unis, démontre au delà de tout doute qu'un des moyens les plus efficaces de protéger l'enfance rurale et semi-urbaine, est l'institution de petits services d'hygiène, dont le personnel donne tout son temps à ses fonctions, dans des territoires limités et habités par une population restreinte. C'est l'Unité sanitaire de comté. Celle-ci, comme vous le savez, met en oeuvre les services permanents d'un personnel composé d'un médecin, d'infirmières et d'inspecteurs sanitaires, qui donnent absolument tout leur temps à leurs fonctions.

En ce qui a trait à la protection de l'enfance, on peut établir que ce Service d'hygiène est chargé:

1o. de l'éducation de la population et de la propagande au milieu de celle-ci au point de vue des mesures d'hygiène à adopter;

2o. d'une attention particulière aux nourrissons, aux enfants d'âge pré-scolaire, d'âge scolaire, afin de prévenir chez eux toutes les causes qui, particulièrement dans la province de Québec, les ont affectés déplorablement dans le passé;

3o. de l'éducation des mères de famille dans le but de leur enseigner, au point de vue pré-natal et post-natal, ce qu'elles doivent faire pour se protéger et protéger leur progéniture;

4o. de la lutte efficace contre les maladies contagieuses, en assurant dans les limites du comté un plus grand soin de la part de la profession médicale dans la déclaration des maladies communicables et en organisant dans toutes les municipalités du comté les moyens modernes de défense contre l'extension des épidémies;

5o. Enfin, de la distribution gratuite des sérums et des vaccins utilisés pour combattre et prévenir les contagions, distribution qui constitue un véritable service public.

La politique du Service d'Hygiène de la province de Québec a été d'assurer aux comtés pourvus d'Unités sanitaires, les services d'un personnel compétent. Dans la plupart des comtés organisés, le médecin en charge est un diplômé en hygiène publique et les infirmières subissent avant d'entrer en fonctions une période d'entraînement de deux mois à l'Unité sanitaire—école de Beauce, où l'hygiène de l'enfance constitue une des parties principales de leurs études.

D'ailleurs, les instructions du Service prescrivent à ces médecins et à ces infirmières de donner à cette matière le plus d'attention, et

de fait, cette partie de leur travail constitue pour les infirmières-visiteuses la plus grande somme de leurs activités. En effet, au nombre de deux, trois, quatre ou cinq, selon l'étendue et la population du comté, celles-ci se chargent de répandre dans toutes les paroisses les notions d'hygiène publique, au moyen d'inspections scolaires, de visites à domicile, de visites aux familles qui ont des nourrissons, au moyen encore de conférences publiques, soit à la population en général, soit aux mères de famille, soit aux enfants des écoles, soit aux institutrices. Elles aident, de plus, dans les cas de maladies contagieuses à organiser dans les familles la défense contre l'extension des épidémies.

Progrès de l'organisation des unités sanitaires de comté

L'expérience de chaque jour nous convainc davantage que ce mode d'organisation est le seul efficace et de nature à nous apporter les résultats les plus rapides. La population de la province l'a compris à la suite des autorités et je n'en veux pour preuve que le fait de l'établissement en l'espace de moins de cinq ans de vingt-trois unités sanitaires couvrant vingt-neuf comtés.

Il est réellement à l'honneur de la population rurale de notre province de voir comment ont été accueillies par elle l'idée de la fondation de ces services locaux et les obligations qu'elle comporte. Vous n'ignorez pas, en effet, qu'un Service de ce genre est onéreux; le budget annuel de \$12,000 établi pour la plupart des unités, comporte une contribution, d'après une échelle ascendante, de la part des conseils de comtés, et bien que ce budget soit largement dépassé dans tous les cas par les dépenses réelles que le gouvernement assume, la conduite des autorités municipales rurales se taxant volontairement pour les mesures d'hygiène, mérite l'admiration de tous ceux qui s'occupent de la santé publique.

Dans la province de Québec, sur une population totale de 2,735,000, la population susceptible d'être organisée sous le système d'Unités sanitaires est de 1,641,200; le reste habitant des villes pourvues d'organisations locales. Au 31 décembre 1930, le chiffre de la population organisée sous le système que je décris, était de 767,062, soit 47 pour cent, laissant 874,138, soit 53 pour cent, à être organisé, et la chose s'est faite dans moins de cinq ans, vu que la première unité sanitaire de la province, celle du comté de Beauce, n'a commencé ses opérations qu'au mois d'avril 1926.

Nous sommes convaincus que d'ici à quatre ou cinq ans, la province sera entièrement couverte de ces organisations. Nous estimons qu'il y a dans Québec une possibilité d'établissement d'unités sanitaires dans cinquante ou cinquante-cinq comtés ruraux; nous avons, par conséquent, franchi la ligne qui sépare par la moitié le nombre des circonscriptions électorales de la campagne.

Au cours de l'année financière se terminant le 30 juin 1930, la

somme de \$246,951.07 a été dépensée pour les fins d'Unités sanitaires de comtés. Ce chiffre comprend la contribution du gouvernement, celle des conseils de comtés et des municipalités indépendantes intéressées et celle de la Fondation Rockefeller qui, depuis cinq ans, nous prête le concours le plus généreux et qui, durant les prochaines quatre années encore, nous aidera dans l'établissement d'un système qu'elle a toujours préconisé comme étant le meilleur.

Vous entendrez aujourd'hui deux membres du personnel de nos unités sanitaires, monsieur le docteur Jean Grégoire, chargé de l'école d'entraînement de Beauceville, et mademoiselle Léonora Dionne, infirmière-visiteuse de l'Unité sanitaire du comté de Témiscouata, vous donner dans le détail le travail particulier qu'un médecin et une infirmière sont appelés à faire pour la protection de l'enfance dans ces organisations.

Je n'ai voulu dans ces considérations brèves que vous donner une idée générale d'un système qui a fait ses preuves et qui, je crois pouvoir le dire sans fausse modestie, fait le point de mire des services d'hygiène de toutes les provinces et attire l'expression de leur considération encourageante.

Efficacité du bien être de l'enfance dans les unités de comté

Les sacrifices d'argent qui ont été faits pour l'institution d'un tel système ont-ils donné des résultats en autant que la protection de l'enfance est concernée, chose qui nous occupe aujourd'hui d'une manière particulière? Il n'y a là-dessus aucun doute et il suffit de comparer les statistiques de 1926 et celles de 1929 dans un certain nombre de comtés où des unités sanitaires ont été établies, pour démontrer les résultats obtenus.

Ainsi, dans le comté de Beauce, une mortalité infantile de 121.5 par 1,000 naissances vivantes en 1926 a été réduite à 87.7 en 1929, tandis que la mortalité par maladies contagieuses de 84.4 par 100,000 de population qu'elle était, est descendue à 55.3.

Le comté du Lac St-Jean qui présentait en 1926 un taux de mortalité infantile de 118.9 en avait un en 1929 de 84.7 et sa mortalité par maladies contagieuses de 63.5 était descendue, durant la même période, à 19.2.

Témiscouata vit dans le même temps tomber sa mortalité infantile de 134.2 à 98.7 et sa mortalité par maladies contagieuses de 124.5 à 21.6.

L'Unité sanitaire de St-Jean-Iberville réduisait durant le même temps la mortalité infantile de ses deux comtés de 125.5 à 92.0 et sa mortalité par maladies contagieuses de 78.1 à 18.6.

La mortalité infantile dans l'Unité sanitaire de St-Hyacinthe-Rouville descendait de 149.7 à 107.9 et la mortalité par maladies contagieuses de 81.5 à 55.3.

La mortalité infantile qui, en 1926, dans le comté de Joliette était de 158.2, était en 1929 de 136.4; et ce comté qui, la première année indiquée avait une mortalité par maladies contagieuses de 33.6 voit celle-ci se réduire à 21.1 en 1929.

Il serait fastidieux de répéter les mêmes constatations pour toutes les unités sanitaires établies. J'ai mentionné les résultats obtenus dans les comtés les plus anciennement pourvus, ils sont probants, et si, comme nous l'espérons, dans quelques années la province entière est couverte de ces organisations locales dirigées et administrées par le Service provincial d'hygiène, nous pourrions présenter des statistiques dont la comparaison avec celles des autres provinces et des autres pays, sera pour la population un objet de contentement et de fierté.

Qu'il me suffise de dire pour ajouter aux statistiques déjà mentionnées, et pour donner une vue d'ensemble, que dans treize unités ayant deux ans ou plus d'existence, le total des décès d'enfants de 0 à 1 an qui avait été en 1926 de 2,361 était tombé en 1929 à 1,736 établissant ainsi une réduction de 625 vies d'enfants sauvées grâce, je dois le dire, à l'efficacité du système adopté.

Contrôle des maladies contagieuses

Parmi les maladies contagieuses qui déciment annuellement notre population d'enfants, la diphtérie occupe un rang que, pour le bonne renommée de notre province, je voudrais bien voir moins proéminent. En 1927, nous perdions de ce fait 469 enfants et en 1929, le total de ces décès bien qu'un peu réduit, atteignait encore le chiffre de 407.

Avec les moyens que la science médicale possède aujourd'hui et met à la disposition des médecins, je n'hésite pas à dire que cette mortalité dans notre province constitue une tache qui ne devrait pas exister. N'en cherchons pas les causes: qu'elles soient dues au peu d'empressement de certains parents à appeler le médecin dès qu'un enfant tombe malade, qu'elles soient dues à la non déclaration de cette maladie contagieuse par le médecin qui néglige de le faire pour quelques raisons que ce soit, qu'elles soient dues à la négligence d'autorités municipales qui ne sont pas conscientes de leur devoir, la chose serait trop longue à dire et j'aime mieux aller tout de suite à ce que le Service provincial d'hygiène a décidé de faire pour contrecarrer les effets de ce terrible fléau.

La distribution du sérum antidiphtérique concurremment avec plusieurs autres produits biologiques, se fait gratuitement dans toutes les unités sanitaires et il n'y a aucune raison pour qu'un médecin ne soit pas pourvu du sérum qu'il lui faut quand il est en présence d'un cas de diphtérie. Il n'a qu'à le demander à l'officier médical de l'Unité sanitaire qui s'empresse de le pourvoir de la quantité nécessaire de ce produit, quelle qu'elle soit. Le père de famille n'a pas à payer pour un sérum donné à son enfant et cela constitue l'exemption d'une charge considérable.

Plus que cela, et après en avoir averti tous les intéressés dans le rapport annuel de 1928 du Service provincial d'hygiène que je faisais à mon ministre, nous avons décidé l'immunisation en masse de la population d'enfants dans toutes les unités sanitaires de comtés. Cette immunisation a commencé dans la plupart de nos unités sanitaires en juin 1930 et les mois de vacances ont été consacrés jusqu'en octobre à ces activités. Cette immunisation à l'aide de l'Anatoxine-Ramon fournie par les laboratoires Connaught, a été appliquée durant cette période à 36,000 enfants de notre province et nous avons bien l'intention, dès le printemps prochain de la reprendre et de l'intensifier. La population a admirablement répondu et elles ne sont pas rares les agglomérations où au cours d'une journée ou de deux jours de séances, mille, douze cents et quatorze cents enfants, amenés par leurs parents, sont venus prendre à diverses reprises, les trois injections nécessaires à leur immunisation contre la diphtérie. Je dois ajouter que dans la presque totalité des cas nous avons eu le concours le plus précieux de la profession médicale. Elle a parfaitement compris que l'immunisation antidiphtérique n'est pas une affaire de traitement mais que c'est une affaire de protection publique dont il est du devoir de l'Etat de se charger. Je me souviens qu'il y a quelques années, le mot d'ordre des hygiénistes de l'Etat de New-York était le suivant: "No more diphtheria in 1930, in the State of New York", résultat qu'on voulait acquérir à l'aide de ce que nous pratiquons ici. J'ignore si le programme qu'on s'était tracé a été suivi et si le but a été atteint; mais, ce que je puis dire, sans faire de promesses, ni établir de garantie, c'est que si nous continuons et si nous intensifions cette immunisation de l'enfance, d'ici à quelques années, la mortalité par diphtérie dans notre province devra être réduite à un chiffre minime.

Ce sont là, mesdames et messieurs, quelques considérations dont je voulais vous faire part. Elles ont été rédigées à la hâte et dans le feu de l'accablant travail qui est le lot de tous ceux qui aujourd'hui s'occupent de santé publique. Je vous prie d'en excuser la forme, mais je crois sincèrement qu'il m'a suffi dans la circonstance de laisser parler les faits sans les enjoliver de phrases bien construites, pour qu'ils vous intéressent.

A mesure que nous développons ce Service de protection publique qui s'appelle l'hygiène d'un pays, la vie de l'enfant nous devient de plus en plus chère. Outre le fait que ces petits êtres sans défense réclament la protection de tous ceux qui s'y intéressent, ils constituent pour nous de la province de Québec, un actif que nous n'avons pas le droit de gaspiller et qu'il faut à tout prix, conserver. Nous essayons de remplir le rôle que la Providence nous a assigné du mieux que nous pouvons; ceux qui viendront après nous l'accompliront sans doute d'une manière plus parfaite, mais nous aurons la satisfaction de dire que la part qui nous a été dévolue a été bien belle en présence des résultats que nos efforts commencent déjà à apporter et à produire.

The County Health Unit as a Solution to the Problem of Infant Health in Rural Districts

DR. ALPHONSE LESSARD

Director, Provincial Bureau of Health, Quebec

(Abstract)

THE protection of infant health in rural districts is one of the chief purposes of the county health unit, as organized in the province of Quebec.

The work of the county health unit in child welfare may be presented as follows:

1. The education of the public with regard to the best means of preventing disease.
2. Particular attention to nurslings, and to children of pre-school and of school age with a view to warding off all handicaps which, especially in the province of Quebec, have been unfortunately too prevalent among children in the past.
3. The education of mothers so that they may take all necessary pre-natal and post-natal precautions that will insure their own protection and that of their offspring.
4. The carrying on of an effective campaign against contagious diseases by taking the necessary means to have all physicians in the county report such diseases, and by introducing in every municipality of the county modern methods for the prevention of epidemics.
5. The free distribution of serums and vaccines and free vaccination in order to prevent the spreading of contagious diseases.

The policy of the Provincial Health Department of Quebec has been to obtain, for every county health unit, the services of competent officers. In most of the organized counties the chief medical officer holds a Diploma in Public Health and the nurses, before taking up their duties, are required to follow a two months' special course on infant hygiene in the training school located in the county of Beauce.

The instructions of the Department prescribe that the doctors and nurses shall give most of their attention to the welfare of infants and young children. According to the size and population of the county, two, three, four or five nurses make it their duty to diffuse, in every parish, the elementary principles of hygiene, by visiting the schools, and the homes, by examining the nurslings, or by giving lectures to the public in general, to mothers only, or to the school children and school teachers. In the case of contagious diseases, they also advise the families as to the proper means of preventing further cases.

Progress of the Organization of County Health Units

Experience teaches us every day that this is the quickest and only efficient method for dealing with such conditions. Our population, like the provincial authorities, has realized this fact, and the establishment, in less than five years, of 23 units in 29 counties, is, in itself, sufficient proof of this assertion.

The manner in which it has welcomed the establishment of these local units as well as the responsibilities which go with them, certainly speaks well for our population. You must realize, I am sure, that such a service is costly. The sum of \$12,000 is voted annually for most of the units, this necessitating a contribution, on a certain ascending scale, on the part of the county councils; and while this appropriation is always exceeded to a considerable extent by the actual expenses met by the government, the attitude of the rural municipalities, in taxing themselves for such sanitary measures, is worthy of the admiration of all those interested in the promotion of public health.

Out of a total population of 2,735,000 in the province of Quebec, 1,641,200 can be organized under the health unit system. The cities have their own local organizations. On December 31st, 1930, 767,062 people, or 47 per cent were thus organized, leaving 874,138, or 58 per cent, to be dealt with. These encouraging results have been achieved in less than five years, the first sanitary unit in the province, that of Beauce County, having been established in April, 1926.

We are convinced that within four or five years the whole province will be organized in the same way. We believe in the possibility of establishing health units in fifty or fifty-five rural counties, which would mean that we have already covered more than half of the eligible districts.

During the fiscal year ending June 30, 1930, the sum of \$246,951.07 was spent for health units. This includes the provincial, county and municipal grants, as well as that of the Rockefeller Foundation which, for the last five years, has generously co-operated with us, and will continue to do so during the next four years, for the promotion of a system that it has always advocated.

The Effectiveness of Child Welfare Work in County Units

We may ask ourselves if the financial contributions given for the establishment of such a system have brought any results as far as the welfare of children is concerned. They have, undoubtedly, and this will be shown by comparing the figures of 1926 with those of 1929 in certain counties where health units have been organized.

For instance, in the county of Beauce, where the infant mortality rate was 121.5 per 1000 births in 1926, it had been reduced to 87.7 in 1929, whilst the death rate attributed to contagious diseases had

dropped during the same period, from 84.4 per 100,000 population to 55.3.

Lake St. John county, which had an infant mortality rate of 118.9 in 1926, had reduced it to 84.7 in 1929, and during the same period, the death rate due to contagious diseases had dropped from 63.5 per 100,000 to 19.2.

In the county of Témiscouata, the infant mortality rate fell from 134.2 to 98.7 during the same period, and the death rate due to contagious diseases was reduced from 124.5 to 21.6.

Again, from 1926 to 1929, the sanitary unit of St. Jean d'Iberville reduced its infant mortality rate from 125.5 to 92.0 and its death rate attributed to contagious diseases from 78.1 to 18.6.

In St. Hyacinthe-Rouville, the sanitary unit reports a reduction from 149.7 to 107.9 in the case of infant mortality, and from 81.5 to 55.3 in contagious diseases' death rate.

In the county of Joliette, where the infant mortality rate was 158.2 in 1926, this had been reduced to 136.4 in 1929. During the same period, the death rate attributed to contagious diseases had also dropped from 33.6 to 21.1.

To give a general idea of the situation, may I add that in thirteen units established for at least two years, the number of infants under 1 year, who died in 1926, was 2,361. In 1929, this figure had been reduced to 1,736, indicating that 625 lives had been saved through the efficiency of the health unit system.

Control of Communicable Diseases

Of the many contagious diseases that afflict each year our child population, diphtheria occupies too prominent a place for the good reputation of our province. During the year 1927, this disease claimed 469 lives amongst our children, and in 1929, this number had only been slightly reduced to 407.

With the scientific means at the disposal of medical doctors to-day, I have no hesitation in stating that this death rate in our province is something that should not exist. Be it due to the delay of certain parents in calling the doctor to the bed-side of their child; to the failure of the doctor, for one reason or another, to report the disease and properly treat the child, to the neglect of municipal authorities who are ignorant of their duties; I have no intention of going into the reasons, but would rather state immediately what the provincial health department has decided to do in order to stamp out this preventable disease. Serums for the treatment of, and antitoxin for the prevention of diphtheria, as well as certain other biological products, are being distributed free of charge in all the health units. There is no reason, therefore, why a medical doctor should not have the required serum when he has to deal with a case of diphtheria.

Moreover, after having given proper notice to all concerned in my 1928 provincial health report to the Minister, we decided upon the general immunization of the children in all our county health units. In most of these, we began this immunization campaign in June, 1930, and followed it during the summer holidays, and until the month of October. During this period, Anitoxin-Ramon supplied by the Connaught Laboratories, was injected into 36,000 children in our province, and it is our intention to renew and intensify this campaign not later than the spring. The population has responded excellently to our wishes in this direction, and very often, during a sitting of one or two days, as many as 1,000, 1,200 and 1,400 children, accompanied by their parents, received, at different intervals, the three necessary injections to immunize them against diphtheria. I must add that in almost all instances we have received the hearty co-operation of the medical profession. The latter has realized that immunization against diphtheria is not a treatment, but a matter of public protection of which the State must take the responsibility.

As we go on developing this public health service, the child's life appears more and more sacred to us. Besides claiming the protection of society, these little defenceless human beings constitute for us, of the province of Quebec, an asset that we have no right to waste and that we must preserve at all cost. We are endeavouring, the best way we can, to discharge the duties assigned to us by the wish of Providence. No doubt that these duties will be performed more efficiently by those who will come after us, but we will at least be indemnified by the thought that the part we have taken in these activities has been a noble one considering the happy results which have been so far achieved through our efforts.

20th ANNUAL MEETING
CANADIAN PUBLIC HEALTH ASSOCIATION
6th ANNUAL MEETING
SASKATCHEWAN HEALTH OFFICERS' ASSOCIATION
HOTEL SASKATCHEWAN, REGINA, SASKATCHEWAN
June 17th, 18th and 19th, 1931

The Problem of Late Registrations

S. J. MANCHESTER

Director, Division of Vital Statistics, Department of Health, Ontario

BIRTH registration may be viewed from two angles, first, its association with vital statistics and, secondly, the registration of births as public records.

The public are not much concerned with the first aspect nor, indeed, with the second, in the mass, but, as individuals, are likely to be very interested at some period of their lives. Owing to the consistently increasing demand upon such records it might be said that birth registration should be considered as a public service and not merely as a bureaucratic function.

It should be clearly understood that a birth certificate is only a record of certain facts respecting a birth which has taken place. It is in no way, nor under any circumstances, a certificate of identification, and birth certificates issued by the Province do not purport to be anything else but the former.

Cause of Non-registration

From the beginning of birth registration in Ontario the responsibility of making it has always lain with the father and with the mother. There exists, however, and seems always to have existed a widely disseminated and firmly grounded belief, which belief, by the way, is absolutely erroneous, that it is the physician's duty to register. This is so, in spite of the fact that not only is there no provision in The Vital Statistics Act for it but the physician was not even mentioned in any way in any of the Acts governing the matter until 1896. More than 90 per cent of unregistered births are unregistered owing to this notion, if one is to believe the statements of those making late registrations. "I thought the doctor did it" is the usual answer as to why the delay. How this idea originated no one seems to know but it persists to this day. Then there are those who believe that the priest who performs the rite of baptism is responsible. Ignorance of the law might be cited as a cause, and this is the principal one offered by non-English speaking citizens, especially those who come from central Europe. Other non-English speaking persons, such as Italians, Finns, Scandinavians and Chinese are very good at making registrations; the first three influenced presumably by the laws of their native countries and the latter by missionaries working among Orientals in our cities, where most of these people are found.

Provision for Late Registration

Provision for late registration was made at the time when legis-

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lation for the registration of births was established, *i.e.*, 1869, and could then be made "within the period of one year."

In 1877 this period was extended to two years, and in 1881, while the period remained the same, the consent of the Registrar-General was made an added requirement. One cannot see from existing evidence the reason for this as consent seems to have been granted without any particular investigation as to why the birth was not registered at the proper time or why it should now be registered.

In 1896 another provision was added by limiting the registration to a period within ten years after birth. This was likely stimulated by a similar provision in the English Acts respecting registration where the Registrar-General "will not, under any circumstances, do so (*i.e.*, authorize registration), after the child is seven years of age." Late registration is now effective in England beyond this seven year period and the informant must appear personally at the office of the registrar of the division wherein the child was born.

In Ontario the age limit (*i.e.*, "within ten years") was abolished in 1908 and registration by the division-registrar limited to within one year after the birth and after this period by the Registrar-General. They, however, continued to register without regard to the limit and the Registrar-General, perhaps believing that "better late than never" was a good policy, accepted the records without question.

In 1918 the conditions of war which made conscription a necessity created a tremendous demand for proofs of age. This revealed the fact that a large number of births had never been registered and every facility was made to have all unrecorded births registered upon application, having in mind the requirements of The Vital Statistics Act. It was thought, under the circumstances, that there might possibly occur many false statements as to age and, in order to place responsibility where it belonged, the Registrar-General conceived the idea of having all late registrations made by statutory declaration. This method, having proved satisfactory, obtains to-day and all late registrations are, therefore, made by the Registrar-General only, the division-registrar not having any hand whatever in the matter. The result is a close supervision of the declarant's qualification.

From 1918 to 1925, declarants were limited to the persons named in The Vital Statistics Act with the responsibility of registration, *viz.*: (a) the father, (b) the mother. No difference was made between these two although the father is named first in The Act and supposed to make the registration if living. Following these are named (c) "the person standing in the place of the parents of the child" and (d) "the occupier of the house in which the child was born if he has knowledge of the birth, or by the nurse or other person present at the birth."

This section was interpreted literally. The father, assuming paternity, need not have been present and, the "occupier of the house" being in practice a negligible quantity, any other person was deemed

to be qualified only if he or she were actually present at the birth. This point of view naturally limited the number of persons who might be considered qualified to make a registration. Effort, however, was made to qualify any adult who, being in the house at the time of the birth might be said to have "assisted," even if such "assistance" were limited to taking necessities to the sick room.

In 1925 steps were taken to permit of registration by any older person. This, of course, included older brothers, sisters or other relative if he or she were in the house at the time of the birth and sufficiently older to have a personal recollection of the occurrence. Even neighbours were allowed to make statements, in which case such neighbours must have seen the child and learned the date of birth within three days after its occurrence. This is the present procedure.

Evidence from these sources is, of course, circumstantial or presumptive since actually none of the brothers, sisters or neighbours were present at the birth but, as a public benefaction or service, the Registrar-General deems it well to accept such evidence, exercising at all times a rigid examination and determining to his own satisfaction whether or not there is sufficient proof of the facts stated.

Several suggestions present themselves which, if put into operation, might go far towards completeness of registration.

1. Since the physician is the person believed by the major portion of the people to be responsible for registering births, make him responsible, as he is in the State of New York, and pay him a fee for each complete return.
2. Report all cases of baptism and circumcision to the Division-Registrar.
3. Shorten the time of registration to one week. A reason against this is that the time is too short in which to choose names, but it is a well-known fact that Roman-Catholics make it a practice of having their children baptized within that time. If they can find names for their children within a week so can all others.
4. Provide legislation whereby no child may be admitted into any school without proof of age from the Registrar-General.
5. Provide that a certificate be given at the time of registration, free of charge, to the parents. This will create envy on the part of careless parents and an investigation as to why they were not so favoured.
6. Appoint registrars of births, deaths and marriages who are not municipal officers; pay them a reasonable fee and make them amenable to discipline by the Department.
7. Effect, as soon as possible, prosecution of the parents for non-registration and see that reports of such action appear in the public press. Let the penalty be reasonable and provide for no escape.

Treatment of Tetanus

Report of Two Cases

NELLES SILVERTHORNE, M.B. (TOR.) AND
A. P. HART, M.B. (TOR.)

THERE is an unanimity of opinion as to its effectiveness as a prophylactic, whereas some element of doubt has been expressed as to its therapeutic value in certain cases in which the disease is already established. This communication embodies a report on the treatment of two cases of tetanus with massive doses of antitoxin given within a short interval of time after admission to hospital. The patients manifested the disease in its most severe form, with a very short incubation period in each case.

CASE I

A boy, G. W., nine years of age, admitted to hospital on August 20th, 1930, and discharged September 9th, 1930.

History of Present Illness—The patient seemed perfectly well until ten days prior to admission. At that time, while fishing, he ran a fish-hook into his thumb. Six days later he developed stiffness in his neck and his jaw became locked. Three days after the onset he developed severe pains in his back on any attempted movement. These symptoms became progressively worse until the boy was unable to open his jaw or to bend his head in any direction.

Physical Examination revealed an extremely ill child with a "grinning" expression. The cheeks showed a well demarcated flush with beads of perspiration standing out on the forehead. The jaw was locked and only with great difficulty could one get a tongue depressor between the incisor teeth. The physical examination was negative except for the following findings in the neuro-muscular system. The muscles of the neck and spine were fixed and board-like. On attempting to flex the neck, the whole spine was elevated "en masse". The abdominal muscles were absolutely rigid and board-like. Kernig's and Brudzinski's signs were strongly positive. The knee jerks were present, equal and explosive.

A provisional diagnosis of tetanus was made and a lumbar puncture performed. The spinal fluid showed a count of four cells (lymphocytes), and a negative test for protein.

Progress and Treatment—The patient had a temperature of 103°F., 100°F. and finally 99°F. during the five or six day period after admission. He remained quite toxic, and, in spite of many injections of serum, his spastic condition seemed unchanged and generalized muscular spasms frequently occurred within twelve hours of treatment.

The administration of serum was as follows:

On the day of admission he was given 40M units intravenously, 30M units intramuscularly, 20M units intrathecally. On the next day, as the stiffness of all groups of muscles had not diminished, the following amounts of serum

were given—90M units (30M every 8 hours) intramuscularly and 40M units intrathecally.

The patient was then given daily injections of serum intramuscularly in an amount from 20M-30M units, every eight to thirteen hours, until a total of 575M units had been given five days after admission. At this time he appeared somewhat improved, but he was refusing fluids and was still having generalized muscular spasms fourteen to twenty hours after the administration of serum. The following day the patient seemed worse, having generalized spastic contractions of the muscles, and the jaw was still quite locked.

It was then decided to give antitoxin by a continuous intravenous method with five per cent glucose in saline. This procedure was carried out for forty-eight hours, during which time he received 130M units. After this last injection of fluid and antitoxin, there was a definite change in the patient. He appeared much less toxic, was able to open his jaw, was quite hungry and able to eat semi-solid food. At last, one felt that all toxin had been neutralized, only accomplished after a total of 705M units had been given within a period of eight days.

On clinical grounds it was considered that this amount of antitoxin was necessary, and one feels that possibly the child would have been on the road to recovery at an earlier time, had this amount been given within thirty-six to forty-eight hours after admission to hospital.

CASE II

A boy, R. L., ten years of age, admitted to the hospital, January 6th, 1931.

History of Present Illness—The child was in good health until six days prior to admission. At that time, while playing, he was injured in the face by a stick of wood. This was a small punctured wound which contained a splinter. The piece of wood was removed two days later, and it was noticed that the area was infected. Three days after the injury the jaw became stiff, and the boy could not open his mouth. This rigidity of his jaw became more marked five days following the injury.

Twenty-four hours before admission he complained of abdominal pain and vomited once.

Physical Examination revealed toxic child with well-marked "risus sardonius", and a jaw that was rigid on attempted opening of the mouth. The incisor teeth could be separated only one-quarter of an inch. On examination of the nervous system, a well-marked, left-sided facial paralysis was noticed. When the patient was asked to open his mouth, the attempt to do so would excite a spasm of the masseter muscles, the erector spinae group and the muscles of the upper extremities. The jaws were brought together quite forcibly in such spasms.

Progress and Method of Treatment—The patient was admitted to the medical ward and within half an hour of admission a continuous intravenous injection of five per cent glucose in saline with tetanus antitoxin was begun. This was continued for a period of four days, approximately 20,000 units of antitoxin being administered every half hour, except for the period when the needle was being transferred from one leg to the other. A total of 2,867,500 units of antitoxin was given in four days by this method. The patient had one severe spasm the night of admission, and two the next morning in spite of (approximately) 800,000 units of antitoxin. On the fourth day of treatment he was much improved, could open his mouth without a subsequent spasm and appeared less toxic. The intravenous injection was then discontinued, and he gradually improved from day to day. A few days after discontinuing treatment, another splinter was removed from his cheek, and a rubber tube

inserted from which dirty purulent material drained. It was noteworthy how little reaction the child had to the continuous antitoxin injection. The temperature rose to 103°F. on the third day of his therapy. From that time on, it remained between 99°F. and 100°F. The facial paralysis completely cleared (about three weeks later) and his masseter muscles slowly relaxed. This persisting stiffness of the muscles of the jaw was a marked feature in both cases. After one felt that the toxin had been completely neutralized by large doses of antitoxin, it was a matter of from two to three weeks before complete relaxation occurred.

COMMENT

The method of treatment used in the second case, to our mind, is the ideal way to treat tetanus of a severe character. Spinal puncture was not attempted, but immediate intravenous therapy was instituted. Shannon¹ discusses the efficacy of the various paths of injection of tetanus anti-serum, and states "that the greatest amount of toxin produced by the tetanus bacillus is found in the blood and finds its way to the motor tracts of the nervous system by the axis cylinders or by the lymphatics. It has been shown, that in the circulating blood is many times the fatal dose of toxin with no fatal issue until the nervous system is involved. The real conflict arises in an attempt to neutralize toxin after it has left the blood for the tissues. There is an interval between the period of supersaturation of the blood with toxin and the time when the fatal issue may occur. This interval between the first suggestion of tetanus and the time necessary to absorb a fatal dose is our opportunity for intensive treatment." Shannon emphasizes, in his paper, the importance of the intravenous route as the maximum absorption by the subcutaneous and intramuscular routes requires from twelve to eighteen hours.

Freedlander², after considering the experimental data of various investigators on the mode of absorption of tetanus toxin, maintains that the important factor is to keep as high a concentration of antitoxin as possible in the circulating blood. This can most readily be accomplished by large, and frequent, intravenous injection.

Hall³, in discussing the pathology of tetanus, quotes experimental work which shows that toxin passes by way of the axis cylinder, but also mentions that it often enters the blood stream, and there can be neutralized by antitoxin.

These few abstracts reflect the observations of many investigators. One is thus forced to conclude that the blood stream is an important avenue of dissemination of toxin, and that any method whereby one can saturate the blood stream with large doses of antitoxin continuously from the earliest possible moment, is the logical one to choose.

One other point, in conclusion, G. E. Smith, in a paper presented to the Canadian Society for the Study of Diseases of Children (1928) on the treatment of fourteen cases of tetanus, pointed out that eight

of these cases had an incubation period of less than ten days; that all had received on an average 50M units of the antitoxin and all terminated fatally. In contrast to the cases reported, which only differ in the route and amount of antitoxin administered, one would feel that these two factors alone favour a better prognosis.

The results obtained in these patients are encouraging, and, since we have no rapid method of measuring the free tetanus toxin of the blood, we are certainly justified in giving serum to the extent of probably greatly over-neutralizing the toxin present.

On the last day of serum treatment the urine was collected throughout the twenty-four hours. The total volume was 1220 cc. During this interval approximately 800,000 units of antitoxin were administered representing 578 cc. of serum (refined globulins) in a total volume of 2,000 cc. of glucose saline. The total urinary nitrogen was 7.22 g. and non-protein nitrogen was 7.20 g*. Thus in spite of protein given in large amounts intravenously, practically no protein was excreted by the kidney. It is interesting to note that no apparent kidney damage was occasioned by the tricresol contained in the antitoxin in a concentration of 0.35 per cent.

In conclusion, may one suggest the use of antitoxin at a rate of 20M-70M units per half hour by the continuous intravenous method, disregarding the ultimate amount administered and maintained until the patient ceases to have spasms, has lost his toxic appearance with complete relaxation of muscles.

SUMMARY

1. Two cases of tetanus with recovery are reported with severe symptoms and incubation periods of six and three days respectively in male children, nine and ten years of age.

2. A method of treatment by the use of very large doses of antitoxin, given by continuous intravenous method, consisting of five per cent glucose in saline, is recommended.

3. In spite of protein given intravenously in large amounts practically no protein was excreted by the kidney, and no damage was occasioned by the tricresol contained in the antitoxin.

The authors are indebted to the Department of Health, Ontario, for the very liberal supplies of tetanus antitoxin and to the Connaught Laboratories for advice and assistance.

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*We wish to thank Prof. H. D. Kay, Dept. of Biochemistry, University of Toronto, for these analyses.

Registration Problems in Saskatchewan*

STUART MUIRHEAD

*Director, Vital Statistics Division, Department of Public Health,
Saskatchewan*

IT is not my intention to treat all the problems that have arisen in Saskatchewan in connection with what may be termed the mechanics of registration, as I presume these are not peculiar to any particular province. I desire rather to mention some of the problems that have arisen out of the analysis of the facts that have been obtained through the collation and classification of the figures obtained through registration, but in passing, I desire to refer to two problems which are peculiar to our province, viz., the great distances, and the length of time required for reports to reach the Department in Regina. For instance, I had occasion to correspond with Rev. Father Riou of Fond du Lac in the extreme northern part of our province, situated just east of Lake Athabasca, and 250 miles north of the Churchill river. My letter was written on November 13, 1929, and it reached him on February 5, 1930. He wrote his reply the same day on which my letter was received by him, and his letter reached me the first week in April, 1930. It is certainly a problem as to how to obtain early vital statistics returns under such conditions.

The other problem which has given very much trouble, and which I hope only applies to Saskatchewan, is how to educate physicians to make out medical certificates in proper form. It seems almost impossible to persuade them to cease using such useless terms as heart failure, septicaemia, accident, etc., and they will persist in giving the contributory cause as the cause of death, and some of them will persist in convicting themselves as murderers by giving the anaesthetic as the cause of death, instead of the disease which necessitated the operation. A large part of the time of a clerk is occupied in obtaining corrections, made necessary by such certificates, and then many of the physicians are very much annoyed when they are requested to give the correct diagnosis. Our medical colleges should be requested to make certification and a study of the international classification a part of their curriculum.

Whipple, in treating of demography, gives the following as a major section of that science: "Vital statistics . . . is the application of the statistical method to the study of these vital facts."

Koren, in his book on the history of statistics, states: "Vital statistics are the foundation upon which rests the modern humanitarian scientific movement for the development and application of the laws of public health and sanitation."

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Dr. Hoffman, in one of his excellent articles on vital statistics, states, that "the accurate registration and qualified analysis of vital statistics is one of the most important functions of government. Much valuable material is collected which is not properly brought to public attention, and it is rather the exception than the rule that the official reports of health officers or registrars of vital statistics contain the extended and critical analysis of the vital facts of the community, indispensably required for our intelligent understanding of the health history of the community." Dr. Woodward, of Washington, D.C., made the following statement at a meeting of the American Statistical Association: "In order that the greatest value may be obtained from the vital statistics that are being more and more extensively compiled every day, more attention must be paid to the scientific analysis of such statistics, not as mere figures but as scientific facts, so that they may actually afford a proper basis for rational sanitary measures."

The foregoing quotations emphasize very forcibly that analysis of the data gathered through registration is of far-reaching importance. In seeking to carry out this function of vital statistics in Saskatchewan, some very important problems have been discovered, and I will now refer to them as briefly as possible.

Infant Mortality. In analysing this section of the mortality tables it was found that a large number of deaths were due to three causes, still births, premature births, and congenital debility. These terms give no indication as to the real cause of the death, and, therefore, it was decided to send a questionnaire to each physician who attended at a death due to one of these causes. This investigation covered a period of five years, and although 1,333 questionnaires were sent out, replies were received concerning 745 cases only. The deaths from these three causes in the period of five years amounted to 43.7 per cent of the total infant mortality, 16.8 per cent of the total deaths in the province. It is only possible to state one of the results of the investigation. Definite causes were obtained of 386 still births, premature births and congenital debility. Of this number, 167, or 43.2 per cent, were due to the condition of the mothers; probably if proper prenatal care had been given to the mothers, these lives would have been saved. The facts obtained through this investigation are now bearing fruit, and a Committee of the Medical Society is collaborating with the Department in working out a plan to have this investigation continued permanently, so that each one of these causes may be investigated. The death certificates, by themselves, fail to reveal the real cause of death. Congenital debility is a very convenient term for physicians to use, but it is meaningless as far as indicating the real cause of the death of the child.

Similar information, as obtained through such studies, reveals to the Health Department a wide field for constructive work, such as instituting mothers' clinics and giving to expectant mothers the information they require.

Cancer. In studying our data, the rapid increase of deaths due to this disease was observed. A detailed analysis was made of the returns from the year when the province was given its autonomy until 1928, and it was found that the death rate from cancer had increased from 8.8 per 100,000 in the year 1905, to 55.1 in the year 1928, an increase of 575 per cent. This fact was appalling, and consequently the Minister of Public Health authorized the printing of the full report of the investigation in pamphlet form, and distributed it to all members of the medical profession in the province, with the result that at the annual convention of the Medical Society, the question was discussed fully. A special committee was appointed to act with the Minister of Public Health in studying the whole cancer problem. This resulted in the passing of a bill by the Legislature, creating a Cancer Commission, for the Province, the first in Canada. Much is expected from the work of this commission in thwarting the terrible cancer scourge.

Diphtheria. For twelve years the Department of Public Health distributed antitoxin free to the medical profession. A study was made of the death rates for diphtheria for the twelve years previous to free antitoxin with the rates for the twelve years following the beginning of free antitoxin; it was discovered, to the amazement of public health officials, that the death rate in the twelve years prior to free antitoxin was actually lower than in the same number of years in which antitoxin was distributed free. In the *pre-free-antitoxin* period, the lowest death rate in any one year was 4.7 and the highest 20.2, while in the *post-free-antitoxin* period the lowest rate in any one year was 7.5 and the highest 25.8. One encouraging finding was that since the free distribution of toxoid was commenced the death rate has decreased very perceptibly. It was at once decided to start an investigation and a questionnaire was prepared, based on the one used in the State of Ohio, and when a death is reported from diphtheria one of these questionnaires is immediately sent to the physician. This procedure has been in operation for a few months only and some of the results are as follows: 52 cases have been investigated, antitoxin was administered in 44 of these. The physicians state that in 24 of these cases, or about fifty per cent, the lives could have been saved if the antitoxin had been administered in time. They further report that in 36 cases, through ignorance or negligence on the part of the parents or other parties, the physician was not called in time. In 12 cases there was no neglect on the part of any person. This is only the beginning of this investigation, but sufficient has been learned to show that diphtheria can be successfully treated if the physician is called immediately when anything wrong with the throat is discovered; it is the duty, therefore, of the health department to institute a campaign to educate parents, and children attending our public schools, in regard to the necessity of taking immediate action when the least symptom appears.

Accidents. The death rate through accidents is increasing rapidly

in our province, and deaths through automobile accidents account for a large part of this increase. In order to determine where the responsibility rests in such accidents a questionnaire has been prepared. The undertakers are supplied with these forms, and when an undertaker officiates at the funeral of a person killed through an accident, he is required to make out a report and mail it to the Department. This system also has only been in operation for a few months. In all, 67 cases have been investigated and 23 or 34.3 per cent have been due to automobile accidents. The following findings are worthy of consideration: in only one case was the driver a female, and in only one case was the accident due to inefficiency of the driver. In only one case did the accident occur at a railroad crossing. In four cases the accidents were caused by fast driving, and in three cases the accident was attributed to the condition of the road. In nine cases the simple statement was made that the car turned over and no explanation could be obtained as to what was the cause. As it is difficult to obtain admission as to fast driving, it may be that if the actual cause could be learned, most of these nine cases would be found to have been due to this factor. In several cases it was mentioned that curves in the road were not properly marked. In five cases the accident was due to cars colliding.

The foregoing is sufficient to show the nature of this investigation; it is our purpose to continue it so that after a sufficient period we may be able to present to our highways department information that may guide them in adopting rules for the prevention of accidents on our highways.

These are the leading problems that have arisen in putting into effect what I believe to be a most important part of the work of the vital statistician. Sir Arthur Newsholme stated some years ago that "mass statistics give information which is inferior in value to the information derived from the intensive investigation of individual cases—the dynamic method of study."

Vital statistics are not an end in themselves, but a means to an end, and that should be the extending of our knowledge of epidemiology, infant and maternal mortality, the furnishing of data as to prevalence or decrease of disease, the furnishing of a basis for rational sanitary measures and assessing the value of social work. If this end is to be attained there must be an analytical study of the data obtained through registration, and I trust the instances described will help to demonstrate the necessity for such study, and prove its practical value to the physician, the sanitarian, the sociologist, the scientist and the statesman.

A Venereal Disease Survey in Manitoba

Conducted by the Winnipeg Health League in co-operation with the
Department of Health and Public Welfare, Manitoba*

FOLLOWING the comprehensive survey of the incidence of venereal diseases in Toronto¹, in 1929, the Winnipeg Health League was invited to make a similar analysis of venereal diseases conditions in the province of Manitoba. This was done in co-operation with the Ministry of Health in Manitoba, and a report was issued in April, 1930.

A questionnaire—the same as used in the Toronto survey, with the exception that Winnipeg was asked for a return of congenital syphilis separately—was sent to 579 physicians: 224 in the country and 334 in the city of Winnipeg. It was also sent to 11 hospitals and clinics. Of the total number of physicians practising, 181 were treating cases of venereal diseases, being 31.9 per cent. There were no refusals to supply information.

THE DATA OBTAINED

The findings from the survey and the analyses are shown in tabulations below.

TABLE I

VENEREAL DISEASES CASES AS TREATED BY PHYSICIANS AND CLINICS

	Syphilis		Gonorrhoea	
	Number Treated	Per Cent	Number Treated	Per Cent
Private Physicians.....	525	62	604	63
Clinics.....	313	38	262	37
Total.....	838	100	866	100
Total syphilis.....			838	
Total gonorrhoea.....			866	
			1704	

Comparing the number of cases of venereal diseases treated by private physicians with those treated by clinics, it was apparent that private physicians were treating more syphilis than the clinics and an almost identical percentage of gonorrhoea cases (Table I).

*The Winnipeg Health League is a branch of the Canadian Social Hygiene Council.

Tables II and III show the difference in percentage of "early and late" cases treated by physicians and clinics and again show that physicians treat more cases of both syphilis and gonorrhoea than clinics.

TABLE II

SYPHILIS CASES "EARLY" AND "LATE"

PERCENTAGE TREATED BY PHYSICIANS AND BY CLINICS

<i>Total</i>		<i>Early</i>		<i>Late</i>	
<i>Private Physicians</i>	<i>Clinics</i>	<i>Private Physicians</i>	<i>Clinics</i>	<i>Private Physicians</i>	<i>Clinics</i>
62	38	60	40	64	36

TABLE III

GONORRHOEA CASES "EARLY" AND "LATE"

PERCENTAGE TREATED BY PHYSICIANS AND BY CLINICS

<i>Total</i>		<i>Early</i>		<i>Late</i>	
<i>Private Physicians</i>	<i>Clinics</i>	<i>Private Physicians</i>	<i>Clinics</i>	<i>Private Physicians</i>	<i>Clinics</i>
63	37	60	40	91	9

Of syphilis patients 95.8 per cent were over 14 years of age and there were more than twice as many men as women undergoing treatment. The same figures in connection with gonorrhoea showed 97 per

TABLE IV

VENEREAL DISEASES CASES—BY AGE AND SEX

<i>Age</i>	<i>Male</i>	<i>Syphilis</i>		<i>Per Cent</i>
		<i>Female</i>	<i>Total</i>	
<i>Under 14</i>	17	18	35	4.2
<i>Over 14</i>	553	250	803	95.8
<i>Total</i>	570	268	838	100
<i>Gonorrhoea</i>				
<i>Under 14</i>	4	22	26	3
<i>Over 14</i>	618	222	840	97
<i>Total</i>	622	244	866	100

cent of those taking treatment to be over 14 with almost three times as many men patients as women. These percentages correspond almost identically with those disclosed by the Toronto Survey.

The Winnipeg venereal diseases cases totalled 77.3 per cent of the total number of cases in the province.

TABLE V

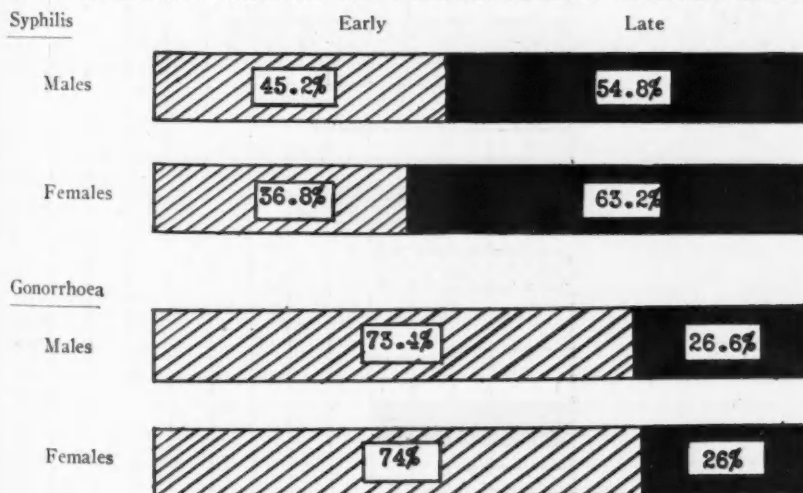
VENEREAL DISEASES CASES—UNDER 14 YEARS OF AGE
ACCORDING TO DISEASE, STAGE OF DISEASE AND BY WHOM TREATED

Treated by	Syphilis				Total
	Early		Late		
	Male	Female	Male	Female	
Clinics.....	0	1	4	8	13
Private Physicians.....	4	5	9	4	22
Total.....	4	6	13	12	35
Gonorrhoea					
Clinics.....	0	1	0	0	1
Physicians.....	3	9	1	12	25
Totals.....	3	10	1	12	25

From the above it will be seen that private physicians treat a greater percentage of the cases. No cases under 14 years of age are treated in the Provincial Government Clinic.

DIAGRAM I

STAGE OF SYPHILIS AND GONORRHOEA INFECTIONS AMONG MALES AND FEMALES IN WINNIPEG



The percentage rates of each disease are roughly the same in Winnipeg and Manitoba.

Diagram I shows that the percentage of tertiary or latent syphilis is approximately the same as the percentage of early syphilis in males but the incidence in females shows considerable divergence.

TABLE VI
COMPARISON OF PERCENTAGE OF CASES IN WINNIPEG AND MANITOBA

	Total	Percentage	
		Winnipeg	Rest of Manitoba
Both Diseases.....	1704	77.3	22.7
Syphilis.....	838	76.1	23.9
Gonorrhoea.....	866	79.7	20.3

With reference to gonorrhoea, it will be seen that the number of "early" cases treated is nearly three times that of the "late". This is true in both male and female cases.

DIAGRAM II

SYPHILIS AND GONORRHOEA CASE RATES FOR WINNIPEG, TORONTO AND 14 COMMUNITIES IN THE UNITED STATES

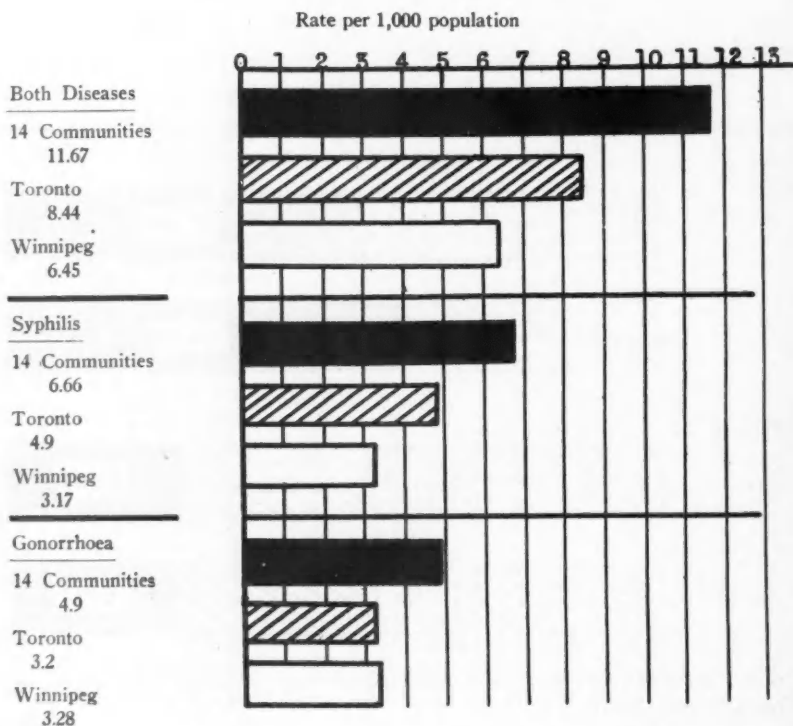


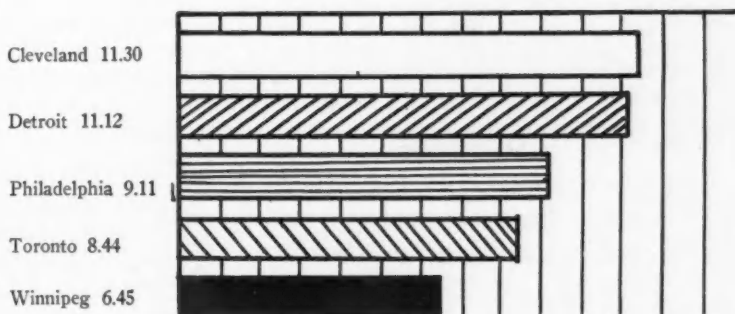
Diagram II shows the rates of syphilis and gonorrhoea for 14 communities in the United States with a population of 619,136 as compared with Toronto and Winnipeg.

Diagram III compares the rates of the cities noted which have been subject to survey recently.

DIAGRAM III

PREVALENCE OF VENEREAL DISEASES IN CERTAIN CITIES

Rate per 1,000 population



The total percentage figures were very favourable to Winnipeg on a basis of case rates. For Winnipeg, Toronto and fourteen communities in the United States, it was discovered that Winnipeg has a rate of 6.45 per thousand of population against a rate of 11.67 in the fourteen American communities and 8.44 in the case of Toronto. In cases of syphilis alone, Winnipeg's rate was 3.17 per thousand of population as against the Toronto rate of 4.9 and the 6.66 rate of the fourteen communities.

Winnipeg apparently had, however, slightly more gonorrhoea than Toronto on a percentage population basis since the report revealed 3.28 per thousand for Winnipeg as against 3.2 for Toronto. The fourteen American communities showed a 4.9 per thousand rate.

"In conclusion", Dr. H. M. Speechly stated on behalf of the committee in charge of the survey, "Our latent rate is lower than Toronto. This, I think, is due to lack of diagnosis and also to the fact that the policy of the Provincial Clinic is to treat infectious cases only. The clinic does not treat congenital cases. The conclusion drawn from the Toronto survey that the greater expense of syphilis therapy is responsible for more cases of syphilis being treated by clinics than by private physicians does not follow from an examination of the figures for Manitoba."

Regina Welcomes You

June 17th, 18th, 19th, 1931



HOTEL SASKATCHEWAN
CONVENTION HEADQUARTERS

THERE is a strong element of fitness in the selection of Regina as the meeting place, this year, of the Canadian Public Health Association. Regina, with true western hospitality, will extend a hearty welcome to the visitors who, in their turn, may have something to learn from contact with the people of this western metropolis.

Although still a very young country, there is hardly any province of the Dominion—or of the Empire

for that matter—that has been more forward in advancing public health than Saskatchewan, and certainly none that can show a cleaner bill of health. A fine climate and proper preventive measures have united in obtaining this result. Vital statistics indicate that the general good health of the people of this region is not exceeded by dwellers in any portion of the world where similar figures are compiled.

Those who visit Regina for the first time and survey its fine thoroughfares, its business section, and view the magnitude of its wholesale district, will find it almost impossible to believe that, within the memory of people still living, the site of this city was the grazing grounds of herds of wild buffalo, and there was not the habitation of a single white man between Fort Qu'Appelle and the Rocky Mountains.

It was in 1882 that the first settlement was commenced on the banks of what was then known as the Pile of Bones Creek. The abandonment of the original projection of the main line of the Canadian Pacific Railway, which would have touched Old Battleford, then the seat of Government, necessitated a new capital, and Governor Dewdney, chose the new location for the future capital of the North-West. Almost immediately settlers began to arrive; a tented town leaped into existence almost over-night. Government buildings were erected, and the place rapidly took on the semblance of a town.

Owing to the great depth of the alluvial soil, it was hard to reach water, and during the first years of its establishment, Regina was the most maligned place in all the West.

Nicholas Flood Davin, the gifted Irishman whose eloquent voice

Canadian Public Health Association

Saskatchewan Health Officials' Association

and pen were ceaselessly employed in the service of the people of the West, established the *Leader* in 1883, and through its medium Regina became widely known, not only in Canada, but in the United States and Europe as well. Mr. Davin on one occasion produced the following fine verses, which in the light of modern development surely show something of the spirit of prophecy:

"A pleasant city on a boundless plain
Around rich land, where peace and plenty reign,
A regal camp, the Province wisdom's home,
A rich cathedral, learning's splendid dome.
A teeming mart, wide streets, broad squares, bright flowers,
A marble figure whence a fountain showers—
What city's this; a gentle princess famed
For happy genius, it Regina named."

The delegates attending the Convention will certainly have an opportunity to survey the city and, bearing in mind these words, will see the fulfilment of a prophecy.

It is doubtful if Canada ever possessed a more gifted writer or one more splendidly endowed with noble speech. In its earlier days, Regina's chief claim to distinction was that it was Mr. Davin's home, and so remarkable was his personality, that much development was required to outgrow this condition. He was the first member of the Federal constituency of Western Assiniboia, the extent of which constituency may give some idea of the wide spaces of the country. It ran west from Balgonie to Medicine Hat, north from the International Boundary to the Saskatchewan River, and was the size of some European Kingdoms.

Regina, being the seat of Government and the Headquarters of the Mounted Police, was the scene of many historic incidents. Such names as Davin, Haultain, Dewdney, Mackintosh, Cayley, Magrath, Thomas Mackay, Colonel Herchmer, Forget, and many others have been identified with it—but it is not our function to turn over the pages of the dusty tomes of history, rather to show something of what Regina is to-day.

It is a fine tribute to the sanity of the Regina citizens that the real estate boom of fifty years ago did not disturb all sense of proportion.

Convention Headquarters

Hotel Saskatchewan

The progress of the city since that time has been steady and substantial. Regina occupies a position commanding and advantageous. It sits in the centre of one of the most remarkable cereal producing regions in the world. The vast alluvial plain that surrounds it, has hardly a single waste acre, and is practically all under cultivation. For about fifty miles to the westward, nearly the same distance to the south, twenty-five miles to the north and with the exception of a narrow break at Pilot Butte, twenty miles to the east, the country is of a uniform fertility.

The wholesale section north of the main line of the Canadian Pacific Railway is a network of switches, and large and substantial buildings serve to house great consignments of supplies, destined for shipment in all directions. It is asserted that more agricultural implements are shipped direct to the farms than from any other centre on the continent. A visit to this section of the city, where the large assembly plant of the General Motors, and the refineries of the Imperial Oil Company are situated, will give some indication of the vast and productive region of which Regina is the clearing house.

A noticeable feature in the Saskatchewan capital is the manner in which the reproach of being a treeless city has been removed.

When Regina was established, and indeed for a number of years afterwards, there was neither tree nor shrub in the place. It was asserted that trees would not flourish on the Prairie, and little attention was at first paid to their cultivation. This fallacy has been completely dispelled. It is doubtful if any other young Canadian city can show greater progress in this respect. The public parks are set with fine groves, and many of the better residential streets are taking on the appearance of avenues bordered by vigorous trees of elm, ash, maple, Russian and native poplar. The woods and shrubberies in the Legislative grounds, have grown with remarkable vigour, and during the twenty-five years since the first planting took place, the growth which includes considerable plantations of conifers, has been extraordinary. The sylvan growth in Regina has had the effect of attracting a bird life hitherto unknown in the vicinity.

The Legislative buildings are well worth a visit. They consist of a splendid structure of Tyndall stone, built in the Grecian style with dome and pillar. The offices are roomy and commodious, the corridors are spacious, and the Council Chamber is a noble hall richly decorated

Three Profitable Days

Forty Helpful Papers---Discussion

with the finer woods native to Canada. The rotunda designed on a splendid European model is hung with the colours of Saskatchewan regiments distinguished in the war, and there may be seen the portraits of Governors, Legislators and others prominent in the history of the country. Two of these pictures at least are by artists of world-wide celebrity. The view from the summit of the building is a noble one, and could only be duplicated from an aeroplane. In the Legislative Library is the identical table around which sat the Fathers of Confederation.



PANORAMIC VIEW, REGINA, SASKATCHEWAN.

The Barracks of the Canadian Mounted Police are also well worthy of attention. It was there the Rebel Leader, Louis David Riel, was executed, and there are many other historic associations.

Regina is an important educational centre, and the Normal School and Colleges, which are handsomely situated on College Avenue, a thoroughfare which has the spaciousness and dignity in keeping with seats of learning, will prove interesting to all those academically inclined. There is a good museum at the Normal School.

Taking it all in all, Regina is a fine and growing city. Its progress is steady, and its people have an abiding faith in its destiny.

Plan Now to Attend

Editorials

THE VENEREAL DISEASE PROGRAMME

THE appearance in the current number of the Canadian Public Health Journal of the report of a venereal disease survey in Manitoba, sponsored by the Winnipeg Branch of the Canadian Social Hygiene Council, reminds us that the venereal disease programme of the Dominion of Canada has now been in operation for eleven years. Surveys such as those conducted in Winnipeg and less recently in Toronto should be of considerable value. Much work has been done and considerable money has been expended in the attempt to control the venereal diseases. It is well that we should from time to time pause to take stock of what has been accomplished.

The Toronto and Winnipeg figures speak for themselves. The incidence shown in these two cities is lower than that in any American city surveyed as yet. In addition we have a record of standard venereal disease control legislation on the statute books of every province except Quebec, which has a law in this regard peculiar to the province. Venereal disease clinics, one hundred and two altogether, have been established in all of the provinces and several hundred thousand persons have been reported as having been brought under treatment. In addition a great deal of public education has been carried on by means of the lecturer, the moving picture, the pamphlet and last but not least the active venereal disease clinic.

It is extremely difficult in the absence of periodic surveys to arrive at an opinion as to what all of this has accomplished. The general opinion is that little has resulted in so far as the control of gonorrhoea is concerned but that syphilis is decreasing. The annual report of the Standing Committee on Venereal Diseases of the Canadian Social Hygiene Council bears out this opinion. General paralysis of the insane which previously increased after all wars, since the Great War has decreased in incidence in our asylums. Routine Wassermann reports, where they are available, show a steady decrease in the incidence of hospitalized syphilis. One cannot but conjecture that in the absence of the co-ordinated plan which came into being immediately at the close of the War, conditions would have been much worse.

There are gaps in the present scheme. For example, venereal disease in rural areas and some urban areas as well is not properly dealt with largely because of the lack of adequate general health machinery. The development of the County Health Unit programme

may be relied upon to correct this situation to a degree. The routine Wassermann test is not applied as generally as it should be either in hospital, in general practice or in the inspection of immigrants. The control of gonorrhoea both in Canada and in other countries seems to be as difficult as ever. The solution of this problem seems to lie largely in public education.

While satisfactory progress has been made in dealing with the situation, we should continue to check our results from time to time with a view to constantly improving our methods. Toronto is arranging for another survey in May of this year. The lessons learned from such periodic investigations should be invaluable.

G. A. Bates.

MAY DAY—NATIONAL CHILD HEALTH DAY

FOR some years, the focusing of public and official interest on child health, by setting aside the first of May of each year as National Child Health Day, has been attempted with a very considerable measure of success in the United States of America. Sponsored originally by voluntary health associations, this movement has gained added impetus from the sentiment associated in the minds of many, particularly those of Anglo-Saxon origin, with the festivities of "May Day". The value of this movement lies in the fact that a National Child Health Day brings a challenge to every citizen to take a share of responsibility for the health and protection of the children of his community. Its success has been dependent, in large measure, on the hearty co-operation of many of the official agencies.

Criticism has been levelled at this method of propaganda, the opponents of its introduction into Canada maintaining that every effort should be expended to assure the maximum of interest in the physical well-being of children during the entire year, and that the setting aside of one limited period for the concentration of such interest upon an activity that is an all-year-round one, is questionable psychology. The fact remains that this practice has been found meritorious in a country in which conditions are more or less comparable to those found in many provinces of Canada, and it is suggested that the wisdom of the extension of this practice to this country might receive further thought from Federal and Provincial health authorities as well as from our National voluntary health agencies.

J. T. Phair.

Ontario Health Officers' Association

SEVENTEENTH ANNUAL MEETING

HART HOUSE THEATRE

UNIVERSITY OF TORONTO

Toronto, May 20th, 21st and 22nd, 1931

(Daylight saving time)

Honorary President

HONOURABLE DR. JOHN M. ROBB
MINISTER OF HEALTH

President

SENATOR THE HONOURABLE
GUSTAVE LACASSE, M.D.

First Vice-President

DR. J. H. RADFORD
MEDICAL OFFICER OF HEALTH, GALT

Second Vice-President

DR. J. W. FRASER
MEDICAL OFFICER OF HEALTH, KITCHENER

PRELIMINARY PROGRAMME

WEDNESDAY, MAY 20th

Chairman—SENATOR THE HONOURABLE GUSTAVE LACASSE,
M.O.H., Sandwich East Township

- 9.30 a.m.—Registration.
- 10.30 a.m.—“Recent Public Health Legislation”—Dr. W. J. Bell, Deputy Minister of Health.
Discussion.
- 11.15 a.m.—“Public Dental Clinics”—Dr. F. J. Conboy, Director, Division Dental Services.

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- 2.15 p.m.—Address—Honourable Dr. John M. Robb, Minister of Health.
- 2.30 p.m.—Address of Welcome—His Worship Mayor William J. Stewart, Toronto.
- 2.45 p.m.—Presidential Address—Senator the Honourable Gustave Lacasse.
- 3.00 p.m.—“Public Health Work in Terms of Prolongation of Life”—Dr. H. M. Cassidy, Department of Political Economy, University of Toronto.

THURSDAY, MAY 21st

Urban Section: Committee Room, Hart House.

9.00 a.m.—“The Mental Hygiene Clinic”—Dr. B. T. McGhie, Director of Hospitals and Sanatoria, Province of Ontario.
Discussion.

9.45 a.m.—“The Economic and Epidemiological Value of Hospitalization of Persons Suffering from Communicable Disease”.

(a) In a municipality maintaining its own municipal isolation hospital—Dr. T. A. Lomer, M.O.H., Ottawa.

(b) In a municipality using a general hospital for isolation—Dr. W. S. Downham, M.O.H., London.

(c) In a community having no municipal provision for isolation
—Speaker to be announced.

Rural Section: Hart House Theatre.

9.30 a.m.—“Present Status of Public Health Administration in Rural Ontario”—Dr. D. A. McClenahan, District Officer of Health.
Discussion.

9.50 a.m.—“Reporting of Communicable Disease”—Dr. R. P. Hardman, Division of Preventable Diseases, Department of Health, Ontario.

10.00 a.m.—“Practical Difficulties Associated with the Reporting and Control of Communicable Disease in a Rural Community”—Dr. C. D. Farquharson, M.O.H., Scarboro Township.
Discussion.

10.30 a.m.—“School Sanitation—Responsibility of the Education Authorities”
Discussion.

11.00 a.m.—“The Medical Officer of Health and School Sanitation”—M.O.H., Ancaster Township.

2.15 p.m.—Address—Dr. T. C. Routley, Secretary, Ontario Medical Association.
Discussion.

3.30 p.m.—Reports of standing committee on “Salaries of Medical Officers of Health”—Dr. J. A. Bell, M.O.H., Sarnia, (Chairman); Dr. J. W. Fraser, M.O.H., Kitchener; Dr. J. S. Nelson, M.O.H., Nepean Twp.; Dr. C. E. Hill, M.O.H., North York Twp.; Dr. P. J. Moloney, D.O.H., Ottawa.

FRIDAY, MAY 22nd

9.30 a.m.—“The Health Education Service of the Department”—Miss Mary Power.

10.00 a.m.—Question Drawer and Discussion.

11.30 a.m.—Report of Nominations Committee.

EPIDEMIOLOGY AND VITAL STATISTICS

A. L. McKAY, B.A., M.D., D.P.H. and F. W. JACKSON, M.D., D.P.H.

Poliomyelitis in Ontario, 1930

A. L. McKAY, B.A., M.B., D.P.H. and R. P. HARDMAN, M.D., D.P.H.
Department of Health, Ontario

POLIOMYELITIS was again epidemic in Ontario during 1930. Six hundred and seventy-one cases and sixty-one deaths were reported by the Local Boards of Health during the year. As the previous year gave an incidence of five hundred and fifty-eight cases and forty-six deaths and as outbreaks are unusual in successive years, the return of the disease in epidemic proportions in 1930 was more or less unexpected.

A questionnaire requesting data of epidemiological and clinical interest was forwarded to each physician reporting a case of poliomyelitis and of the total of six hundred and seventy-one cases, returns were obtained in five hundred and eighty-six instances.

In the first six months of the year only six cases were recorded in the entire Province, during July reports of twelve cases were received and the disease reached serious proportions in the second week in August and remained so until the fourth week of October. September was the month of highest incidence, two hundred and fifteen cases being reported. The number of cases reported in August and October were approximately the same; there was a pronounced falling off during November, with only nine cases in December. The curve of

incidence in the 1930 outbreak varies considerably from that of 1929, in that the peak was reached four weeks earlier in 1930 and the disease was prevalent four weeks longer than in 1929.

Distribution of cases into urban and rural groups, (urban being taken as a population of five thousand and over), showed that urban cases predominated, constituting 52.7 per cent of the cases. This distribution is, in the main, the result of the outbreak in the City of Toronto, which contributed 236 cases.

Incidence according to age and sex is presented in Table II. The data indicate that males predominate, (63.3 per cent). The age group with the highest incidence was that of five to nine years, accounting for more than one-third of the cases. This is in agreement with the experience which was obtained in the 1929 epidemic. The next age group in order of frequency was 0-4 years, and this was followed by the 10-14 and 15-19 age groups; 9.5 per cent of the cases were in adults over twenty years of age.

The Use of Immune Human Serum.

Blood was collected from recovered cases of the disease, who had not been treated with convalescent serum. Practically all of the individuals who

donated blood showed some paralysis. A presumptive Kahn test was done on serum obtained from each donor, and, if found to be negative, the serum was pooled and filtered. Slightly in excess of seventy-five litres of blood was collected from recovered cases and this gave a yield of

augmented, this is impossible. At the Main Laboratories, Parliament Buildings, a twenty-four hour service was maintained for the forwarding of supplies of serum and at the various distributing centres the physicians in charge co-operated in every way to have the serum forwarded with all

TABLE I

OCCURRENCE OF PARALYSIS (EXCLUSIVE OF FATALITIES) IN 532 SERUM TREATED CASES

414 Cases Treated Before Paralysis or Paresis—

Days of illness.....	1	2	3	4	5	6	7
No. treated.....	185	125	53	24	14	5	8
Paralysis occurred in.....		6	15	9	8	5	8
No paralysis occurred in....	185	119	38	15	6		
Percentage recovery.....	100	94.4	71.6	62.1	42.1	0	0

103 Cases Treated After Onset of Paresis—

Duration of paresis.....	1	2	3	4	5	6	7
No. treated.....	40	28	7	5	22	1	
Paralysis occurred in.....	19	18	5	5	21	1	
No paralysis occurred in....	21	10	2		1		
Percentage recovery.....	43.7	29.4	20	0	0	0	
Improving at the date of return of report.....	8	6	3	1			

15 Cases Treated After Onset of Paralysis—

Paralysis present when serum administered.....	6	4	2	2	1		
Percentage recovery.....	0	0	0	0	0		
No recovery at date of return of report.....	6	4	2	2	1		

approximately thirty-five litres of serum. This was filled in 10 cc. vials. The usual amount of serum sent for one case was 20 cc.

Supplies of serum were maintained at sixteen distributing centres. A circular letter was sent, early in July, to every physician practising in the Province, advising him where this material might be obtained when he had a case for treatment. It was impossible to provide sufficient serum to permit of physicians keeping it in stock. This undoubtedly would have stimulated the earlier use of the serum, but until the available supply at any one time can be considerably

despatch, irrespective of whatever time of day or night the request for the supply was made. The greatest number of cases occurred in seven closely related counties, *e.g.*, York, Ontario, Durham, Northumberland, Peterboro, Victoria, Dufferin, but sporadic cases appeared throughout the entire Province.

Table I gives the result of the use of convalescent serum in five hundred and thirty-two cases as reported by the physicians in attendance. These cases are divided into three groups: (1) those who showed no paralysis on the day that serum was given, (2) those who showed some paresis at the

time serum was given, (3) those who were paralyzed when serum was first administered. In the first group, of all those given serum on the first day of illness none showed any resulting paralysis. Serum given on the second day gave a recovery rate of 1.6 per cent. From this day on the percentage of paralysis gradually increased until all patients receiving serum the sixth or seventh day showed paralysis. Diagnosis of cases in the pre-paralytic stage is, of course, a difficult matter and undoubtedly some cases have been included which were not

who received serum were undoubted cases of poliomyelitis.

In the second group, namely, those who showed paresis of various days' duration before the serum was given, the result of serum therapy was much less satisfactory than in Group 1. Given serum on the first day that paresis was noted, 43.7 per cent recovered without residual paralysis, and of those given the serum on the second day, 29.4 per cent recovered with no residual paralysis.

In fifteen cases in which serum was given after definite paralysis had set

TABLE II

INCIDENCE OF POLIOMYELITIS ACCORDING TO AGE, SEX AND RESIDENCE
ONTARIO, 1930

Age Group	Urban						Rural						Rural and Urban	
	M	Per cent	F	Per cent	Total	Per cent	M	Per cent	F	Per cent	Total	Per cent	M	Per cent
0-4.....	40	20.2	30	27.6	70	22.5	42	24.2	23	22.1	65	23.4	135	23.2
5-9.....	73	37.	44	39.2	117	37.9	52	30.	34	37.6	86	31.1	203	35.3
10-14.....	39	19.7	11	10.2	50	16.3	35	20.2	25	24.2	60	21.5	110	18.8
15-19.....	24	12.	14	12.5	38	12.3	28	16.2	11	10.6	39	14.1	77	13.2
20-24.....	13	6.4	8	7.1	21	6.7	6	3.5	6	5.8	12	4.6	33	5.6
25-29.....	6	3.2	4	3.4	10	3.4	7	4.1	1	.9	8	2.8	18	2.1
30-49.....	3	1.5	0	0	3	.9	3	1.8	4	3.8	7	2.5	10	1.8
	198	100	111	100	309	100	173	100	104	100	277	100	586	100

poliomyelitis, but the uniformity of symptoms as stated on the physicians' reports and the high percentage (41.8 per cent), which had lumbar puncture performed for confirmation of diagnosis, would tend to substantiate our contention that the majority of those

in, all remained paralyzed. Of the total cases reported to the Department who were treated by serum at any time during the course of the disease, regardless of whether paresis or paralysis had occurred, it was found that 69.2 per cent made a com-

plete recovery. It has been argued that to evaluate the results of any form of treatment one must have a comparable group who, not receiving the specific treatment in question, would act as controls. To withhold serum treatment for this purpose would be unwarranted in such a disease as poliomyelitis with its far-reaching and permanent disabilities.

The serum therapy as carried out in Ontario in 1930 had quite evident limitations. In the first place the question of dosage had been based on the previous reports and also the experience gained in the Manitoba epidemic and the epidemic of 1929 in Ontario. A quantity of 20 cc. was the amount that was immediately sent to a physician on notification of a case in the pre-paralytic stage. It would appear that in some instances larger doses might have given a more favourable result; on the other hand, however, the majority of cases seemed to respond to the above mentioned dosage.

Circumstances did not permit of the selection of donors on the basis of

length of time elapsing between the time of their recovery and the collection of blood, nor was it possible to assay the potency of the serum. It is planned, however, to make provision, if possible, for the potency testing of this year's serum supply. It is known from the work of several research investigators that there is considerable variation in the potency of different lots of serum. It has also been shown that the serum of 69 per cent of a group of city dwellers (forty-six in number), who were never known to have had poliomyelitis neutralized, in each instance, the virus of the disease. This observation opens up a wider field of possible donors providing the serum may be tested for potency.

In conclusion, the experience with the use of convalescent serum for over two years in Ontario shows it to be of considerable value. The policy of continuing the preparation of this serum and its free distribution must be maintained until such time as animal serum may be prepared, or other forms of treatment giving better results have superseded it.

REPORTED CASES OF CERTAIN COMMUNICABLE DISEASES IN CANADA*
BY PROVINCES—FEBRUARY, 1931

Diseases	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Diphtheria....	3	27	9	148	150	24	24	15	15
Scarlet Fever...	6	33	27	364	747	49	89	69	107
Measles.....	8	17	4	371	152	143	646	138	11
Whooping Cough.....	—	8	4	171	331	40	23	14	158
German Measles....	—	—	—	48	34	†	20	3	5
Mumps.....	—	24	—	65	888	333	34	70	153
Smallpox.....	4	1	—	—	25	1	73	1	10
Cerebrospinal Meningitis..	—	2	—	3	4	3	1	—	3
Anterior Poliomyelitis	—	1	—	—	2	2	—	—	—
Typhoid Fever	—	—	3	41	21	6	3	3	8

*Data furnished by the Dominion Bureau of Statistics, Ottawa.

†Not reportable.

PUBLIC HEALTH NURSING

RUBY M. SIMPSON, Reg.N., and BARBARA A. ROSS, Reg.N.

The Objectives of the Mothercraft Centre

HELEN C. SATCHELL, REG. N.

THE Mothercraft Training Centre of the Hospital for Sick Children, which was opened at 84 Wellesley Street, Toronto, on February 1st, 1931, is a training centre where registered nurses from any training school will be able to take a four months' post-graduate course in mothercraft.

The main object of the Centre is the education and teaching of both mothers and nurses in the functions and responsibilities of motherhood, teaching and methods being those of preventive medicine applied to the foundation of life. One of the first principles is to seek out, and where feasible, prevent and remove the causes of illness and disease. In this way it is hoped that both mothers and nurses may be helped to feed and care for babies in a simple, natural way that will lead to happy homes in the present and good health and efficiency in the future.

It is a well-known fact that in countries where at least 80 to 85 per cent of the babies are breast-fed there is a decidedly low infant mortality rate, with also a high power of resistance to disease, coupled with good general health and physique in the older child. Therefore, surely it is the birthright of every child to be given, when possible, what nature intended.

To the Mothercraft Home will be

admitted those young mothers with their first babies, who, when they leave the obstetric hospital, feel they would like some help, supervision and teaching in the general care and management of their babies before returning to their homes to carry on alone. There will be admitted, also, those mothers who are in difficulty with regard to breast-feeding their infants, whether it be a case of insufficiency or over-abundance of breast-milk causing the trouble. These difficulties may be overcome by treatment and supervision, the result being a happy, contented baby naturally fed at regular intervals and sleeping all night. The general care and management of the premature infant also constitutes a large portion of the work carried out at the Mothercraft Home.

Any registered nurse interested in, and hoping to work amongst mothers and babies, whether on the district as a public health nurse or in any other organization, or obstetric hospital, should find it greatly to her advantage to have the added diploma and practical experience. If she desires to take the training, she should get in touch as early as possible with the Supervisor of the Mothercraft Centre, Hospital for Sick Children, Toronto, who will gladly furnish information regarding the course.

LABORATORY SECTION

G. B. REED, Ph.D.; A. L. McNABB, D.V.Sc.

A Tularaemia Case Report

G. A. OOTMAR, M.D.

Provincial Board of Health Laboratory, Kelowna, B.C.

IN September, 1930, I received a letter from Mr. Eric Hearle, Entomological Laboratory, Kamloops, stating that on a recent trip to the Kootenay district he met a man who had apparently suffered from tularaemia some months previously and that, knowing of my interest, he had obtained a sample of blood for examination. Mr. Hearle had discussed with me a report that rabbits had died in remote parts of this district from a condition which I felt was probably tularaemia.

The history of the case was as follows:

In the evening of August 10th, 1929, the patient was bitten by a deer fly. On the following morning there was marked redness and swelling at the site of bite. Three days later he developed a high temperature and some ulceration on the side of his nose. The condition was diagnosed as erysipelas. He was moderately ill for three weeks at the end of which time the local condition practically subsided. Then he developed severe pain in the left kidney region, ran a high temperature and was critically ill in Calgary. On October 7th, he had a peri-nephritic abscess opened from

which about one and a half pints of fluid were drained. After three months in hospital he made a satisfactory recovery.

The sample of blood which Mr. Hearle obtained arrived on October 24th, 1930, and an emulsion of tularaemia culture (grown on a glucose cystine agar slant) was made with normal saline to which 0.2 per cent formalin was added. The turbidity of the suspension was of such a degree that clear type could still be read through it when placed in a test tube 10 mm. in diameter.

With this emulsion a macroscopic agglutination test was performed. The tubes were immersed in a water bath for two and a half hours and placed over night in a cold room. Positive agglutination was evident in tubes up to 1:80 dilution.

On account of the cross agglutination between *B. tularensis*, *Br. abortus* and *Br. melitensis*, suitable tests were set with these antigens, but negative results were obtained for the latter organisms. Through the kindness of Dr. Parker, Hamilton, Montana, who has had a wide experience with tularaemia and Rocky Mountain fever, tests were made in his labora-

tory. Complete agglutination of *B. tularensis* was found in all dilutions up to and including 1:80 and partial agglutination in dilutions of 1:160 and 1:320.

As far as we know this is the first case of tularaemia definitely recognized by agglutination tests in British Columbia. In all known cases it is mentioned that at the site of the bite of ticks or deer flies, ulceration occurs; which ulcer appears as if made with a punch, possessing clear-cut margins. In this case the infection was caused by the bite of a deer fly. The most common sources of infection are the handling, skinning or dressing of rabbits (jack, cottontail, snowshoe), and from the bites of woodticks and deer flies. Other less frequent sources are the skinning or other manipulation of wild animals other than rabbits, especially rodents. The bites of such animals convey the infection; in the case of ticks, the tick excreta may be conveyed to the eyes by the hands, in rubbing the eyes, etc. Cases infected in this way, it is reported, are quite common among persons handling sheep. There are probably other sources that have not yet been determined.

Report of the Committee on Undulant Fever Canadian Public Health Association

Personnel of Committee: Drs. D. J. MacKenzie (N.S.), H. L. Abramson (N.B.), J. P. Decarie (P.Q.), N. McL. Harris (Ont.), A. L. McNabb (Ont.), N. E. McKinnon (Ont.), F. T. Cadham (Man.), F. G. McGill (Sask.), A. C. Rankin (Alta),

H. W. Hill (B.C.), and Chas. A. Mitchell (Ottawa) (Chairman).

Your Committee has endeavoured to gather during the year further information relative to the presence of undulant fever in the Dominion of Canada. From information at hand it would appear that undulant fever is not present to any marked extent in this country and when compared with some of the States of the United States a comparatively small percentage of our population has suffered infection with the *Brucella melitensis*.

The majority of cases have occurred in the province of Ontario although three cases have occurred in New Brunswick and one case in Alberta. Dr. A. L. McNabb, Director, Division of Laboratories, Department of Health, Ontario, has reported that twenty-five specimens of blood from patients suffering from continued fever gave a positive reaction for the *Brucella abortus*, seventy-eight for *B. typhosus* and seven for *B. paratyphosus* B. The agglutination titre in the *Brucella abortus* cases varied from 1/320 to 1/2500 and the duration of illness, as reported by their physicians, varied from a few weeks to a few months. In one instance two cases were found in one family, these being boys of the ages of 12 and 14 respectively. In Ottawa one case of undulant fever occurred as a laboratory infection. The patient in question was apparently infected through a skin abrasion while bleeding guinea pigs which had been inoculated with milk containing *Brucella abortus*. The serum from this patient gave a positive agglutination reaction in a dilution of 1:1000 to the bovine strains,

but a lower to the human, caprine and porcine strains. The period of incubation was approximately one week.

In the province of Quebec it was found impossible to undertake the examination of sera for *Brucella abortus* infection because of the limited space available in the Provincial Laboratory this year. Repairs to the laboratory building were being made and this necessarily disturbed work. The work will be commenced shortly and in next year's report of the Committee will be included the findings of the Provincial Laboratory.

With regard to *Brucella abortus* infection in cattle, tests have again shown that about 20 per cent of the dairy animals of this country are infected. Infection to date has not been found in swine. This is a fortunate thing since the porcine strains appear to be much more pathogenic for man than are those of bovine origin.

The Federal Department of Agriculture is giving laboratory assistance

to herd owners and a scheme for the control and elimination of infection is being tried out on a rather extensive scale. Many farmers are taking advantage of this scheme and doubtless if a sufficiently intensive educational programme is carried out the number will increase.

The use of the so-called live vaccine has greatly decreased recently, and, moreover, those who still insist upon manufacturing this product are employing cultures of low virulence.

Your Committee feels that the public is in a fortunate position in regard to undulant fever. Those virulent strains, especially the porcine strain, have not been seeded, apparently, to any serious extent in the herds of the Dominion. We have also less *Brucella abortus* infection in our animals than exists in older countries, and the danger to man is, as a consequence, less.

Chas. A. Mitchell, Chairman.

NEWS AND COMMENTS

P. A. T. SNEATH, M.D., D.P.H.

ROYAL SANITARY INSTITUTE

Canadian Examinations

PROVISIONS for the holding of examinations for the certificate of the Royal Sanitary Institute, England, have been made by the Quebec Branch of the Institute. Certificates are granted to sanitary officers and to meat and food inspectors who successfully pass the examinations. The excellent results which have been accomplished by the Royal Sanitary Institute are well known and only qualified inspectors receive appointments throughout Great Britain. Local Boards of Examiners have been ap-

pointed in the past years in the Provinces of Quebec, Ontario, Manitoba, Saskatchewan and Alberta. It is interesting to note that the Department of Health of Bermuda now require from its inspectors the certificate of the Institute, and arrangements have been made with the local Board of Examiners of the Province of Quebec whereby a course of lectures have been provided. Two inspectors from Bermuda have already qualified and the third candidate is preparing for his examinations. In Quebec the local Board consists of Dr. T. A. Starkey and Dr. R. St. J. Macdonald, Secretary. The next examinations will be

held in Montreal on April 30th and May 31st, 1931. The offices of the Local Board in Quebec are in the new Medical Building, McGill University, Montreal. A short course of lectures and demonstrations covering the subjects of the examination have been arranged by the Local Board and particulars may be obtained from the Secretary, Dr. R. St. J. Macdonald.

**The International Association of Dairy and Milk Inspectors
Montreal, September 10th, 11th,
and 12th, 1931**

THE programme will contain a number of papers of interest to medical officers of health, laboratory workers, in addition to papers of more special interest to those charged with the responsibility for the control of milk and dairy products. The President of the Association is Dr. A. R. B. Richmond, of the Department of Health, Toronto, and the Secretary-Treasurer is Dr. Paul B. Brooks, of the State Department of Health, Albany, New York.

British Columbia

THE recommendation of the Greater Vancouver Health League that the establishment of a Union Board of Health for Vancouver's metropolitan area has been strongly supported by Dr. J. W. McIntosh, D.P.H., Medical Officer of Health. Dr. McIntosh has presented the several proposals of the Health League to the City Council and it is likely that a conference of the Councils of Vancouver, New Westminster, North Vancouver, Richmond, Burnaby, and North Vancouver District will be held shortly to develop the plan. Dr. McIntosh emphasized to the Council the many advantages of a metropolitan Board, particularly in the safe-guarding of the milk supply and in the control of communicable diseases. The Health League proposed that only pasteurized milk and cream be sold in Vancouver. Dr. Mc-

Intosh has warmly endorsed this recommendation, stating that the objective of the Department of Health was the pasteurization of all milk and cream offered for sale, at the earliest possible date.

Alberta

ALBERTA'S travelling health clinic was operated last year at a total cost of \$31,133, according to information given by the Minister to questions raised in the House. This included the expense of school health surveys made by public health nurses.

Work of the travelling clinic covered a wide territory, 27 points being visited from Fort Vermillion in the north to Wrentham and Barnwell in the south. Three hundred and six school districts were covered and 8,487 children inspected by public health nurses.

The Edmonton Health League, organized under the direction of the Canadian Social Hygiene Council, has provided a Speakers' Bureau to assist clubs, churches and other organizations in presenting the subject of personal and community health. The President of the Edmonton League is Dr. J. S. Wright, and the Honorary-Secretary, Canon C. F. A. Clough.

Miss Mary McCuaig, until recently nurse in charge of the Edmonton Branch of the Victorian Order of Nurses for Canada, has been appointed Western Supervisor of the Order, replacing Miss Nan McMann, who resigned owing to illness. Miss McCuaig is a graduate of the Toronto General Hospital School for Nurses, and served overseas from 1915-1919. Following a period of institutional work, she was granted a Victorian Order Scholarship for a year's post-graduate work in public health nursing at the University of Toronto.

Saskatchewan

ANNOUNCEMENT has been made of the appointment of Dr.

J. W. McNeill as Commissioner of Mental Hygiene by the Provincial Government. Dr. McNeill's appointment marks a further step in the development of an adequate Mental Hygiene programme for Saskatchewan.

Ontario

ACCORDING to the analysis of published reports, the Brant Sanatorium, Brantford, Ontario, has the lowest maintenance cost of any sanatorium on the continent. The cost per capita per day is \$1.59.

The annual Meeting of the Board of Governors of the Victorian Order of Nurses for Canada will be held at the Chateau Laurier, Ottawa, on May 20th and 21st. Prior to the Annual Meeting a national conference of Victorian Order Nurses will be held in Ottawa on May 18th and 19th.

Mr. H. A. Rowland, secretary for the past 16 years of the Department of Health, Toronto, has been appointed Superintendent of the Riverdale Isolation Hospital, Toronto, the appointment became effective from April 1st, 1931.

Miss Margaret Nealin, Reg.N., has succeeded Miss Aileen Riordan, Reg. N., who resigned in December as Secretary of the Child Hygiene Section of the Canadian Council on Child and Family Welfare.

The question of unemployment insurance has been brought before the Provincial House by the Hon. James Lyons, M.P.P. The suggestion was made by him that this should be a compulsory system jointly financed by the worker, the employer and the State; further, that the administra-

tion be placed in the hands of a commission similar to the Workmen's Compensation Board, with adequate safeguards to prevent abuse of the benefits. Such a scheme, he believes, would take care of ordinary unemployment as well as emergency situations, and the responsibility would be properly placed. As no mention of this subject was made in the speech from the Throne, the introduction of the subject created profound interest.

The South Ontario session of the Ontario Registered Nurses' Association will be held at Kitchener, Ontario, April 9th to 11th. The Honourable Dr. Robb, Minister of Health; Miss Elizabeth Smellie, Ottawa; Miss Jean Davidson, Brantford; Dr. Frederick Mowbray, Dr. R. B. Armour, Toronto; Miss Jean I. Gunn, Toronto; and Dr. Ward Woolner, President of the Ontario Medical Association, are among the speakers. Miss Gunn's topic will be, "Does the Supply of Nurses in Ontario Exceed the Demand".

Nova Scotia

DR. ELIZA BRISON, recently of the staff of the Victoria General Hospital, has been appointed Psychiatrist under the Children's Protection Act to fill the vacancy created by the resignation of Dr. Clyde Marshall. Dr. Brison's duties will include the direction of the Training School (for the feeble-minded) recently established at Truro.

Prince Edward Island

DR. J. J. FARRELL, Summer-side, has been appointed Sanitary Inspector for the province of Prince Edward Island under the Provincial Board of Health.

ONTARIO HEALTH OFFICERS' ASSOCIATION

Toronto, May 20th, 21st, 22nd, 1931

Books and Reports

D. T. FRASER, B.A., M.B., D.P.H.; R. R. McCLENAHAN, B.A., M.B., D.P.H.

The Pathology of Internal Diseases

—By *Wm. Boyd, M.D., F.R.C.P., Ed. Dipl. Psych., F.R.S.C., Prof. of Pathology, University of Manitoba. Publishers, Lea and Febiger, Philadelphia, 1931. Two hundred and ninety-eight illustrations, 888 pages. Price, \$10.00.*

How many physicians turn to their textbook of pathology when they need assistance? Do we not usually content ourselves with the brief statements which appear in our textbooks of the Practice of Medicine? Yet as Dr. Boyd points out in his preface, a sound understanding of pathological processes gives a new viewpoint and "will endow the physician with a roentgenray vision so that the coverings of the body are rolled away and the hidden processes of disease stand revealed". This new volume is not a textbook of pathology in the old sense of the term. It is really an illustrated textbook of Internal Medicine, "written from the point of view of the mechanism of disease, its why and its wherefore".

The chapters present the disease conditions under the headings of the various organs or systems. The plan of each chapter, which the author has followed, is first to bring to the physician as a background, a brief but adequate summary of essential anatomical and physiological facts, to follow this with a discussion of the morbid anatomy and morbid physiology and in conclusion to relate these findings with the symptoms. It is this latter achievement which makes the volume

of such value to the practitioner. This new work reveals pathology as the key to the right understanding of clinical medicine.

Dr. Boyd is to be congratulated on the preparation and use of such a number of helpful illustrations (298). Without these, additional textual explanations would have added to the size of the volume which has been carefully kept to a convenient size.

With Dr. Boyd's "Surgical Pathology" published previously, we have a complete presentation of pathology for the practitioner.

The author has brought great credit to himself and to the University of Manitoba. It is indeed a worthy accomplishment that from its Medical Faculty, two important, practical books have been given to the profession this year. I refer to Professor Daniel Nicholson's "Laboratory Medicine" and to Dr. Boyd's new volume.

D.L.M.

Child Health—By *Mrs. Norma Selbert, R.N., B.A., M.A., College of Medicine of the Ohio State University. Publishers, W. B. Saunders Company, London and Philadelphia; Canadian Agents, Mc-Ainsh & Co. Limited, Toronto. 1931, illustrated, pp. 261. Price, \$1.00.*

This book is the outgrowth of the author's experience in the teaching of Child Care. It is essentially a textbook. However, it is written in a clear style and free of technical expressions and is thus admirably suited to the

intelligent mother, never father. A short introductory chapter traces the evolution of Child Health Work—presenting an outline of its development and enactments in the United States relative to the subject. Subsequent chapters deal with economic and social problems, parents and family life, the baby's arrival and chapters devoted to the phases of childhood, nursing schools, the school child. The author, fortunately, does not stop at this period of development. Health problems affecting high school, college, industry and youth's leisure time, each receive due recognition. It should be emphasized that this book is in no way a guide to a home treatment of sickness though simple remedial and preventive measures are not infrequently given. Many problems are presented for which a physician's advice is urged.

It is encouraging that, under the section "neo-natal period", one finds this sentence, "Immunize as soon as the doctor advises to do so against diseases which can be prevented: smallpox, typhoid fever, diphtheria and possibly scarlet fever." One might criticize the author for not emphasizing the prevention of disease more forcefully. However, such criticism is disarmed to a great extent by "The only safe policy is to obey your own doctor". The reader might be taken a little more into the author's confidence in regard to the subject of the prevention of ophthalmia.

The references to modern literature of an authoritative and accessible kind are extremely good. One is pleased to see other references of a non-technical nature to Bertram

Russell, Galsworthy and St. John Irvine, though apparently Dent does not publish "The Last Mrs. Fraser" as far as I could determine from inquiry at their Toronto office.

The book is useful and good.

D. T. F.

The Social Welfare Services of the English-Speaking Catholic Community of Montreal. *Publishers, The Catholic Community Council, 1502 St. Catherine St. W., Montreal; also, the Canadian Council on Child and Family Welfare, Ottawa, Can., 120 pp.*

Of Montreal's population 52,000 persons constitute the group of English-speaking Catholics. This survey was made under the direction of the Executive Secretary of the Canadian Council on Child and Family Welfare to provide a plan and programme of work for development over a period of years which would more adequately meet the social welfare problems of this section of Montreal's population.

Section X of the report presents the findings of the survey in relation to health problems and important recommendations are made by Dr. A. Grant Fleming, Professor of Public Health and Preventive Medicine, McGill University, who acted as an adviser on health problems to the Committee. These recommendations relate primarily to the need of adequate services for the sick, whether dependent or self-supporting, and whether cared for in their own homes or in hospitals or convalescent homes. The survey should prove most valuable, not alone to those for

whom it was conducted, but to the entire city of Montreal, and should serve to stimulate interest in other large cities to intelligently grapple with their own problems of social welfare.

R. D. D.

International Health Year Book, 1929—(Fifth Year), Reports (with Vital and Public Health Statistics) on the Public Health Progress of Forty Countries and Colonies in 1928, League of Nations Health Organization. Series of League of Nations' Publications, III Health, 1930, III, 8, Official No. C. H. 838, 1504 pages, price, 24s. (\$6.00).

The information contained in the Year-Book is furnished by the heads of national health services or persons deputed by them for this purpose.

The object of the Year-Book is to give a survey of the progress made by the various countries in the domain

of public health. It indicates new developments in the working of the various health services, gives the most recent data as regards vital and health statistics and reviews the work of the principal international organizations dealing with public health, such as, the League of Red Cross Societies, the Rockefeller Foundation and the League Health Organization.

The statistics and data concerning each of the forty countries are arranged on the uniform lines adopted by the League Health Organization, and include twenty-seven standard tables which fall into the following seven groups: general demography, birth-rates, general death-rates, causes of deaths, infant mortality, public health statistics and data on curative medicine.

The Year-Book also contains a survey of industrial hygiene in Germany, Belgium, Great Britain, Italy and the Netherlands.

R. D. D.

BOOKS RECEIVED

An Introduction to Practical Bacteriology. A Guide to Bacteriological Laboratory Work. By T. J. Mackie, M.D., D.P.H. and J. E. McCartney, M.D., D.S. Published by E. and S. Livingstone, 1931, Edinburgh.

A Manual of Tuberculosis for Nurses. By E. Ashworth Underwood, M.A., B.Sc., M.B., Ch.B., D.P.H., with an introduction by Prof. J. R. Currie. Published by E. and S. Livingstone, 1931, Edinburgh.

Criteria for the Classification and Diagnosis of Heart Disease. By a committee, Joseph H. Bainton, M.D., Robert L. Levy, M.D., W. C. Munly, M.D., M.C., U.S.A., Haroll E. B. Pardee, M.D., of the Heart Committee of the New York Tuberculosis and Health Association, Inc. New York, 1929.

Report of the Provincial Health Officer, Nova Scotia, for the year ending September 30th, 1930, and of the Deputy Registrar-General for the year ending December 31st, 1929. King's Printer, 1931, Halifax, N.S.

Eighteenth Annual Report of the International Association of Dairy and Milk Inspectors. Paul B. Brooks, M.D., Secretary-Treasurer, State Department of Health, Albany, N.Y.

Handbook of Protozoology. By Richard R. Kudo, D.Sc., Assistant Professor of Zoology, University of Illinois. Published by Charles C. Thomas, 1931, Springfield, Ill., Baltimore, Md.

Second Conference on the Health and Welfare of Merchant Seamen. Geneva, October, 1929. Published by the League of Red Cross Societies, Paris.

Riders of the Plagues. The Story of the Conquest of Disease. By James A. Tobey. Published by Charles Scribner's Sons, 1930, New York.

American Public Health Association Year Book, 1930-1931. American Public Health Association, 370 Seventh Avenue, New York, N.Y.

Annals of the Pickett-Thompson Research Institute. Volume VI. Ballière, Tindal and Cox, London, England.

CURRENT HEALTH LITERATURE

These brief abstracts are intended to direct attention to some articles in various journals which have been published during the preceding month. The Secretary of the Editorial Board is pleased to mail any of the journals referred to so that the abstracted article may be read in its entirety. No charge is made for this service. Prompt return (within three days) is requested in order that the journals may be available to other readers.

Treatment of Rabies—Of 18,234 patients who received Semple anti-rabic vaccine, Lieut. Col. J. Morison, Director of the King Edward VII Memorial Pasteur Institute, Shillong, India, reports that only one case of paralysis occurred, and that this patient recovered completely in fourteen days. In twelve cases of severe biting by animals proven rabid, Semple vaccine was given in 2 cc. doses intravenously on alternate days. In this group no deaths occurred. The dose used in the ordinary treatment is 5 cc., given daily for fourteen days.

India Correspondent, B.M.J., No. 3661 (Mar. 7), pp. 420-421.

Transfusion Donors as Sources of Immune Serum for Treatment of Poliomyelitis—The sera of three of four regular donors on the list of Stanford University School of Medicine were found on testing on monkeys to have definite virucidal properties. The advantage of such potential donors is their availability and the quantity of the sera obtainable.

Faber, H. K., J.A.M.A., v. 96, No. 12 (Mar. 21), pp. 935-937.

Impetigo in Schools—Clinical features, aetiology, complications, preventive measures, differential diagnosis are excellently presented in this comprehensive paper.

O'Donovan, W. J., The Lancet, v. 1 1931, No. IX (Feb. 28), pp. 461-464.

A Simple Method for Blood Culture—Dr. McCartney, Director, Southern Group Laboratory, London County Council, has devised an inexpensive and practical blood culture bottle. A 6-ounce white "medical flat" bottle with a screw cap is used. The cork washer is removed and a small hole is punched through the screw cap. A rubber washer is inserted to replace the cork washer. The bottle is filled with 100 cc. broth and a "viskap" top is used as a final protective covering. The method possesses so many advantages that its adoption should be carefully considered by every laboratory interested in blood cultures.

McCartney, J. E., The Lancet, v. 1 1931, No. XI (Mar. 14), pp. 583-584.

An Unusual Case of Canine Rabies—An observation of 10 days is usually required for dogs, suspected of being rabid, which have bitten persons. Although such a period has been shown to be adequate, an exception is here recorded in which a dog showed suspicious symptoms, but at the end of ten days appeared normal. Symptoms reappeared on the fifteenth day and the dog died on the eighteenth day. Diagnosis of rabies was confirmed by the presence of negri bodies in brain smears and by animal inoculation.

Schlingman, A. S., Am. J. Pub. Health, v. XXI, No. 3 (Mar.), p. 287.

The Health Officer and the General Practitioner—

This was the subject of a symposium presented at the American Public Health Association's meeting last October. Five aspects of the subject were discussed, namely,—Preventive Trend in the Practice of Medicine, Dr. Gordon Bates, Toronto; Preventive Medicine in Private Practice, Dr. W. G. Cole, Detroit; European Methods of Attacking the Disease Prevention Problem, Dr. R. A. Reynolds, San Francisco; Public Health and Private Practice, G. C. Ruhland, Spracuse; Responsibility of the Personal Physician to Preventive Medicine, Dr. W. H. Ross, Brentwood, N.Y.

Am. J. Pub. Health, v. XXI, No. 3 (Mar.), pp. 249-278.

Undulant Fever—In the investigations of human *Brucella* infection on this continent the epidemiological and bacteriological studies of A. V. Hardy in Iowa have been highly significant. It is fitting, therefore, that the National Institute of Health (Washington), Bulletin No. 158, on the subject of Undulant Fever should have been prepared by Hardy and his co-workers of the Iowa State Department of Health. This Bulletin of 89 pages gives an excellent account of the bacteriology, immunology, epidemiology, clinical information and measures for control and prevention. Copies may be obtained from the office of the Superintendent of Documents, Washington, D.C. Price, twenty-five cents.

National Institute of Health, Bulletin No. 158 (Dec., 1930) pp. 89.

Indications for Treatment in Pulmonary Tuberculosis—(1)

Haemoptysis of unknown origin

should be taken to indicate tuberculosis. (2) Pleural effusion is the result and not the cause of pulmonary tuberculosis. (3) X-Rays are by far the most important method of examination. Correct interpretation of radiographic findings is essential. (4) Physical signs are misleading, but the presence of constant moist sounds over the upper part of the chest may be taken as definite evidence of tuberculosis. (5) Presence of tubercle bacilli in sputum is conclusive.

Burrell, L. S. T., Mitchell Lecture, Royal College of Physicians, London. *Tubercle*, v. XII, No. 4 (Jan.), p. 162.

Records: Their Value in Public Health Nursing—

"What records at all". "If records, what form should they take"—"The writing of records"—a practical and helpful discussion primarily for nurses, but of value to all engaged in public health work.

MOHR, N. E., *The Canadian Nurse*, v. XXVII, No. 2 (Feb.), pp. 88-93.

Studies of the Bacillus Calmette—Guerin Strain of the Tubercle

Bacillus—This paper substantiates the observations of Petroff and Branch on the "dissociation" of B. C. G. "Since it is possible to bring about such a marked alteration of B. C. G. *in vitro* and since so little is known relative to the factors that enhance or retard the pathogenicity of the tubercle bacillus, it would seem essential to use great caution in any application of B. C. G. as a prophylactic vaccine against tuberculosis." (From the Hegeman Memorial Research Laboratory, Metropolitan Life Insurance Company Sanatorium, Mt. McGregor, New York.)

SASANO, K. T. and MEDLAR, E. M., *Tubercle*, v. XII, No. 5 (Feb.), pp. 214-219.

